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PATHOLOGICAL ANATOMY.

THE LAST COURSE

OF

XAVIER BICHAT,

FROM AN AUTOGRAPHIC MANUSCRIPT

OF

P. A. BÉCLARD;

WITH AN ACCOUNT OF THE LIFE AND LABOURS OF BICHAT,

By F. G. BOISSEAU,

MEMBER OF THE ROYAL ACADEMIES OF MEDICINE OF PARIS AND MADRID,
OF THE MEDICAL SOCIETY OF EMULATION, &c.

TRANSLATED FROM THE FRENCH

BY JOSEPH TOGNO,

STUDENT OF MEDICINE.

13057

PHILADELPHIA:

JOHN GRIGG, NO. 9, NORTH FOURTH STREET.

1827.

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Eastern District of Pennsylvania, to wit:

Be it remembered, that on the nineteenth day of July, A. D. 1827, in the fifty-first year of the Independence of the United States of America, John Grigg, of the said district, has deposited in this office the title of a Book, the right whereof he claims as proprietor, in the words following, *to wit:*—

“Pathological Anatomy. The last course of Xavier Bichat, from an Autographical Manuscript of P. A. Béclard; with an account of the Life and Labours of Bichat, by F. G. Boissseau, member of the Royal Academies of Medicine of Paris and Madrid, of the Medical Society of Emulation, &c. Translated from the French by Joseph Togno, Student of Medicine.”

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OF THE EDITOR.

HAVING become possessor, at the sale of the library of the late celebrated professor Béclard, of a manuscript written in his own hand, of the last course of lectures of Bichat, the idea of publishing this work presented itself to us; but before doing this, we thought it proper to consult with several enlightened Physicians. They all unanimously concurred with us in saying, that the smallest part of the doctrine of a man who has rendered such eminent services to science and humanity should be collected with religious care; that the public would eagerly seek the compilation of a course of lectures during the delivery of which Bichat spent the last hours of so valuable a life; and of which we regretted very much that we possessed no document, and, lastly, that it would be a supplement full of interest to all the editions of his works. These motives have determined us.

Doctor Boisseau has politely paid attention to the publication of this work, and has prefixed a notice of the life and labours of the immortal author of the *Anatomie Générale*.

J. B. BAILLIÈRE.



SHORT ACCOUNT

OF THE

LIFE AND LABOURS OF XAVIER BICHAT,

BY F. G. BOISSEAU.

VICQ-D'AZYR was no more; but such men as Chaussier, Corvisart, Desgenettes, Hallé, Pinel, were preparing the glory of the medical school of Paris, when appeared in the midst of the disciples of Desault, one of those superior minds, born to regenerate science and to perfect human knowledge.—Bichat, a pupil of Mark-Anthony Petit, flies to Paris to escape the massacre of Lyons, and immediately engages the attention of the senior surgeon of the Hotel-Dieu. From this moment he resolves to treat the latter with the tenderness of a son; he lends him his pen, assists him in his operations, and supplies his place in numerous consultations; in the meantime, he studies the writings of the great masters, he dissects, and operates on the dead subject. After the death of Desault, he publishes the last volume of the *Journal de Chirurgie*, and renders a pious homage to the memory of the great surgeon who had foreseen his genius.

After two years of silence and study, Bichat delivers a course of lectures on Anatomy, Physiology, the diseases of the bones and operative surgery. Having recovered from

a violent attack of Hæmoptysis, he resumes his dissections and experiments; he publishes the surgical works of Desault, he founds *la Société médicale d'émulation*, and enriches the memoirs of this society with original observations on the synovial membranes, the relations of the organization of the membranes to each other, and the symmetry of the different organs. In the beginning of the nineteenth century, Bichat, publishes his Treatise on the membranes, the Inquiries on life and death, and his General Anatomy; he then employs himself in classifying diseases in an immutable manner; in order to discover their nature and seat, examines an immense number of subjects, and lastly delivers lectures on Pathological Anatomy:—France finds in him a Bordeu, a Vicq-D'Azyr, and consoles herself in not having given birth to Haller and Morgagni.

The plans of genius are so vast, that it can, of itself, execute them but in part; Bichat aspired to rebuild the temple of medical science on the immoveable foundation of Physiological and Pathological Anatomy. But nature sometimes seems to take pleasure in putting boundaries to the progress of human intellect, and condemns to a premature death the inquisitive minds of those, who follow her steps too closely and with too much ardour, in the prosecution of her wonderful works. Bichat, only thirty years of age, exhausted by watchings, intellectual labour, and continual attendance in the dissecting rooms, died in the commencement of the century which he would have enlightened. Sandifort had said of him: “before *six years shall have passed, he will outstrip our Boerhaave.*” Corvisart wrote to the first Consul, “Bichat has just died on a field of battle which numbers more than one victim: *no man in so short a time has done so much and so well.*”

Why weep for great men? they have lived sufficiently long, when they have performed enough to render themselves glorious; but we must record their virtues, that they

may serve as models, and proclaim their success, to confound envy.

“The most amiable moral qualities, said Buisson, enhanced in the person of Bichat the eclat of his merit. It was impossible to find more frankness and candour, or one who would more readily sacrifice his own opinions when a solid objection was presented to him. Incapable of anger and impatience, he was as easily accessible in the moments of his laborious pursuits as during his leisure hours. His generosity made him always a liberal friend to those of his pupils, who, far from their families, were accidentally in want of funds, or who had not the means to procure elsewhere the necessary instruction. Skilful in distinguishing talent, he encouraged it in every possible manner as soon as he discovered it. No one was more ready to bestow confidence on those whom he thought sincerely attached to him. No one could resist his amiable and prepossessing manners, and a short conversation with him was sufficient to give us an insight into his character, and to convince us how far he was from those reserved expressions and that affected politeness which so often makes a show of real sentiment. All who knew him were his friends, except those who were jealous of his brilliant talents. Envy sometimes pursued him, and sought to destroy his reputation; his enemies considered it a crime that he should be a man of merit; but he contented himself with despising their vain attacks, and thought them unworthy of refutation, always ready to renew with his detractors, a friendship which they alone had broken.”

Generalization of facts is the most fertile work of genius, and it is that which best characterizes it. Bichat has left a great monument of this kind. Before his time the organs of the body were studied separately, in the order of the functions or of their situation; he classified the tissues in his vast mind according to their analogies, and

thus realized the great view of Bordeu in the organic department; in a word, he created general anatomy.

He wished to do for the functions, that which he had done for the organs, but here (why not confess it?) he paid a tribute to human weakness. Instead of confining himself to describing in a superior manner the known laws of organic action, he followed Barthez in adopting a vital principle, and attributed to the tissues properties of which several were functions, and the others, doubtful qualities. But he founded amongst us experimental Physiology, which Haller had created beyond the Rhine; and it is to the example which he set by inquiring into the functional relations of the brain, lungs, and heart, during life and at the moment of death, that we owe all those experiments which have since been made during twenty-five years, on the respiratory and circulating actions of the organs, the encephalon, the spinal marrow and nerves.

The influence of the works of Bichat is not confined to France; Germany has been influenced by the genius of this great man, and has followed him in the new routes which he has discovered and in those which he has revived. Even proud England follows, although at a distance, the footsteps of this Frenchman; so that, Brown, Darwin, Godwin, and even Hunter are now forgotten.

Italy recognises in Bichat the worthy successor of her innumerable anatomists and physiologists; she consoles herself in seeing a Frenchman shine in his turn on a theatre on which so many Italians had rendered themselves illustrious; here also Bichat has found disciples worthy of him. His works translated into Spanish, will make skilful observers of men in the peninsula, when this unhappy country shall enjoy the blessings of peace, under the auspices of a government sufficiently enlightened not to fear science.

Bichat's genius shone even in descriptive anatomy. Nobody before him displayed in it so much clearness added to an extreme conciseness and remarkable rapidity: such

was the character of his style on whatever subject he wrote. Inaccuracies and negligences have been remarked in his productions; in that only we must not imitate him, but nevertheless he is, without doubt, the Frenchman who best understood the art of writing on Anatomy and Physiology. His style was animated and brilliant when he had to treat of the functions and intellectual faculties. Bichat had not time to perfect his style, although he has proved that he could have done so, had he possessed more leisure, and had he been less occupied with the advancement of science.

His most remarkable undertaking was that of attempting to reform Therapeutics. The most splendid talent can not embrace every thing, it was reserved for M. Alibert to apply physiology to Therapeutics.

Professor Pinel had the glory of having inspired Bichat with the idea of the distinction of the tissues; but Bichat truly made this idea his own in applying it to Physiology. Had not death snatched him from us, there is no doubt but that he would have applied it still more extensively to Pathology; but our present generation had no positive data on this subject, when the present manuscript, now offered to the public, was submitted to us.

The attentive reader will readily perceive that Bichat, under the name of pathological anatomy, meant to designate true pathology, that is to say, the knowledge of morbid phenomena observed during life, and the organic alterations found after death. He will appreciate how profound were the views of this man, so dear to our country; with what ardour he sought truth; with what warmth he seized the relations of things, from which arose characteristic differences; with what clearness he had laid the plan of his course of lectures; with what rapidity he described the characters of different diseases; with what candour he avowed the ignorance under which they laboured, in his time, on many obscure points of pathology.

Since a premature death has snatched from us this great

genius, and has deprived us of the work in which, in time, he would have committed his pathological views, let us congratulate ourselves that one of his zealous hearers has gathered the outlines of his last course, in which his luminous genius had shone. The sketch of a picture of Raphael is not without value: at least we see in it the lineaments of the thought of the immortal painter.

The reader will peruse in the present work many ideas which now have become a kind of public property, and the originality of which is given to others—not to Bichat: and he must bear in mind that this manuscript was written by Béciard in 1805.

It is evident by this date, that it was not taken from the lectures of Bichat by Béciard himself, but by a person, the correctness and sagacity of whom were known to him, since he took the trouble to transcribe it. Perhaps this work was compiled from the notes which were communicated to him. What convinces me that he has copied it entirely as it will be read, is that we perceive every where in it the lively and rapid diction of the speaker, the same familiar phrases often recur, and several are to be found in the works of Bichat. It is well known that he wrote with great rapidity, without re-perusing his composition, hence the similarity between his speaking and writing.

I made it a point to respect the text of this manuscript: I confined myself in correcting the style, which was very defective, and I preferred to leave in it some blemishes, fearing that I might alter the meaning in substituting one word for another, or in changing the construction of the phrases. In a word, I acted as I would have done had I had the honour to transmit to the public the unpublished labours of Bichat himself.

This tradition, however imperfect it may be, of the last thoughts of a mind so penetrating and so vast, can not fail to interest the numerous disciples of his cotemporaries

and his own pupils. It is also a precious document for the history of the medical art. None of the errors which I permitted to remain in this work can be attributed to Bichat, unless they should be found in his works, or if they are not the immediate consequence of his known principles. The greatest number of them belong to the time in which he lived.

I can not forget to speak here of the great loss which Anatomical science has experienced in the unexpected death of Béclard: it is the lives of such men that we must place in opposition to the detractors of medicine; will they not be silent at the sight of so much science and devotedness!

Paris, 26th August, 1825.



PATHOLOGICAL ANATOMY.

LAST COURSE OF BICHAT.

PRELIMINARY DISCOURSE.

MEDICINE has two general objects in view; first, the knowledge of diseases, and second, their cure. Under this last relation there are few diseases submitted to the empire of medicine, and it is only to the former that we refer pathological anatomy.

Diseases may be divided into two classes: those which affect the general system, and those which attack only one organ in particular. The first do not come under the cognizance of pathological anatomy. All the diverse kinds of fevers produce a general derangement, although, oftentimes no organ be particularly injured. The knowledge of general diseases differs essentially from that of organic diseases: for the former, observation is sufficient; in the latter, on the contrary, we have besides observation, *post-mortem examination*. This is the reason why the knowledge of general diseases is only founded on certain signs which attach themselves to nothing. Such is the etiology of fevers and of other similar diseases: all the distinctions, and classifications which have been made according to sea-

sons, humours, &c. are evidently fallacious. Their nosology presents an extreme difficulty.

Not so with local diseases, which may be classified according to the character of the lesion of the affected organ. Their diagnosis is infinitely more easy than the first, since there exists one more means to discriminate them, *post-mortem examination*; and it is only since some interest has been excited in this science, that we may flatter ourselves with having made some progress in the knowledge of these diseases. It is well known into how many errors we have fallen, so long as we had confined ourselves to the simple observation of symptoms. Let us take for example consumption. It has been considered as an *essential malady*, before we had recourse to post-mortem examination; since, it has been shown that marasmus was only a consecutive symptomatic malady of the affection of an organ. Jaundice has been for a long time considered by practitioners as an *essential malady*; post-mortem examination has also proved that this affection, thought primitive, was in reality only consecutive to diverse alterations of the liver, of which it is always the symptom. The same has happened with respect to dropsies, which although for a long time considered as essential affections, have never been other than the result of some organic disease. It is, then, ignorance of organic affections, resulting from a total neglect of post mortem examination, which is the cause that has misled the ancient practitioners on most diseases; thus, *Cullen* and *Sauvages* have erred in their classifications.

It is true that symptoms are also advantageous in the examination of organic diseases; but for a methodical classification we must shun every thing which is only accessory; a nosology founded on the affections of the organs will necessarily be invariable. It is also to the want of post-mortem examination, that we may ascribe the hypothetical reasoning of the ancients on the atrabile, pituita, &c., imaginary sub-

stances that they had never seen, but which they fancied. The solids have also been the subject of these erroneous principles: every swelling was called obstruction, and every obstruction (*engorgement*) was a scirrhus. Physicians have never followed the natural course which we indicate; a rapid view of the progress of the science of medicine will convince us of it.

We may distinguish two classes of physicians; those who have only observed, and those who to observation have added post-mortem examination. The former are very numerous; the latter are confined to a very small number, and are only to be met with in the last century. Hippocrates, Celsus, Aretæus, and all the Greek authors, have been satisfied with observing the symptoms; and consequently most of their diseases are badly described.

Immediately after the Greeks, physicians were divided into two sects: the empirics, who cured according to experience, and the dogmatics, who were guided by symptoms. Not one, among either, has left a post-mortem examination. The same thing happened with the Arabs, who only imitated the Greeks. Five or six centuries elapsed without any improvement in medicine. At its revival, the Greek authors were again commented upon. Afterwards followed the sect of the chymists: *Paracelsus*, and *Van Helmont*, explained every thing by the laws of fermentation. *Sydenham* was satisfied with observing symptoms. Then *Stahl* and *Boerhaave* appeared. Their disciples, and particularly those of *Montpellier*, in these last centuries, very seldom have had recourse to post-mortem examination. It was not until about the middle of the seventeenth century that surgeons made, for the first time, anatomical examinations. Physicians adopted this method. *Bonnet* made a collection of observations, but replete with erroneous theories.

Morgagni appeared after him, and truly created patho-

logical science, and whilst yet in its infancy, he carried it to perfection, and his work on chronic diseases is a *chef-d'œuvre*. Several tried to write on the same subject, particularly *Lieutaud*, but all are far inferior to *Morgagni*. *Portal* and *Vicq-d'Azyr* have also shone on this subject, and the article in the *Encyclopédie* does honour to the latter.

This practice, of post-mortem examination, is that which is followed, in our days, all over Europe.

CHAPTER I.

Considerations on Post-Mortem Examination.

BEFORE we establish precepts on the manner of examining dead bodies, we must consider first the diverse alterations which different diseases produce. Any one who has had the opportunity to see only few post-mortem examinations, has observed that the condition of the organs, either internal or external, varies according to the affection which has produced death. We may distinguish three kinds of death: sudden death; that which happens in an acute malady; and, finally, that which follows a chronic disease.

In sudden death, there is hardly any alteration present, either in the internal or external organs; in the greatest number of cases the disease is concentrated either in the brain, heart, or lungs: such as, asphyxia, syncope, poisoning, &c.

The muscles are red, with a texture as firm as in a natural state; the skin is hard to the touch, the eyes prominent; the mucous surfaces, and often, even the cheeks retain a blush; the expression of the physiognomy re-

mains; in a word, the appearance of all the organs differs essentially from what they are in chronic diseases.

The second kind of death begins to have some influence in altering the aspect of the cadaver. Every acute disease always alters more or less perceptibly the parts; there are even some, the effects of which, on the corpse, are similar to those in the most protracted diseases; all the solids are altered, almost decomposed; as is the case in pestilential fever, &c.

When acute diseases are continued for a long time, then the fat is absorbed, serosity abounds, and the phenomena become, soon after, like those of chronic diseases. Nevertheless, we must observe that the organs most altered, are those in which nutrition is most active in an healthy state; and on the contrary, those which enjoy only an obscure vitality, are the least sensibly injured. Such are the tendons and oponeuroses.

Lastly, the third kind of death, produced by chronic diseases, totally changes the state of the organs in the subject. Their texture is ordinarily found very much altered, especially when death has been protracted; they have a flaccidity foreign to the usual state; the alterations affect also the tendons and oponeuroses, which become yellow.

In general, these are the diverse influences of disease on the body, necessary to be known. We must be on our guard not to take for the effect of the disease, what only belongs to that kind of death. Nevertheless, many have fallen into this error; thus, in inflammatory fevers they were looking for an engorgement in the brain, without reflecting that it was produced by the state of the lungs at the moment of death; if, for example, the patient had had, for some time, a difficulty of breathing, and were they to find an effusion in the brain, they never failed to ascribe the effusion to the disease, although it was entirely foreign to it.

If the patient dies in a syncope, no traces of blood are to be found in the brain.

The same takes place in all the organs; often the condition in which we find them, is only the consequence of the state in which the subject was at the time he died. Sometimes also, the disease may have produced it, but we are ignorant of any such circumstance.

The lividity and flushing of the face may be numbered among these phenomena. We should also be aware of the changes that death produces in the diseased organ: inflammatory tumours, which during life are red and prominent, are resolved entirely after death, which is not observed in chronic tumours; it is probable that in acute inflammation of the internal organs the same thing happens, and we judge so by analogy.

In an inflammation of the intestines, the tension of the abdomen may be partially produced by the gases, and also by the swelling of the neighbouring cellular tissue; and indeed it may disappear almost entirely after death. That which causes the resolution of acute tumours, is, that the irritation which retains the blood in the part, disappears with life. In chronic inflammation, this change does not take place after death, because the blood is then found almost blended with the parts.

In the examination of a corpse we should pay particular attention to the essential phenomena, without stopping to observe accessory circumstances.

It is equally advantageous to seek for the connection of the phenomena which have resulted after death, with those which have taken place before.

The manner to proceed in autopsic examinations, must differ according to the different kinds of diseases we have established; commonly it is prosecuted in an anatomical order, but it is not the best method to give precise ideas on the subject; in general diseases, it is a great deal better

to follow the order of the functions: in this manner we arrive at a knowledge of those which are injured.

In local diseases the manner of proceeding must be different: we must first examine the affected organ, then the neighbouring organs which participate in the lesion; and afterwards proceed to examine the functions. The advantage resulting from this method is, that we may narrowly sift the maladies which affect every system. By this means, the diseases of two organs utterly different will not be confounded, although situated in the same cavity. However, there are some affections which do not admit this methodical classification: such are scurvy, syphilis, &c.; but persevering study may enable us hereafter to find for them a fit place.

CHAPTER II.

Order to be followed in Pathological Anatomy.

WE shall divide at first the examination of diseases into two parts. In the first, we shall examine the affection peculiar to each system individually, and the modification which general diseases experience in these same systems. In the second, we shall consider these diseases in the diverse organs which they occupy; and in order to be the more methodical, we shall proceed in the order of the functions.

Every system has an order of functions which is peculiar to itself, whatsoever be its situation. Such is the phlegmon or inflammation of the cellular tissue: whether it be in the extremities, or in the trunk of the body, it is always of the same nature; the pus which it produces is always the

same. Whatever may be the place in which the serous membranes are found, their diseases are analogous; they only are susceptible of adhesion. The cutaneous system is the exclusive seat of certain morbid affections, such as tetter, syphilitic eruptions, and inflammatory pustules. This was so obvious in the eyes of practitioners, that they had formed a particular class of cutaneous diseases. To conclude, from all we have said, it is easy to see, that it is all important to examine the diseases of the systems singly.

In considering diseases under the first relation, we shall make a continual abstraction of the systems, which, conjointly with the affected one, concur to the formation of an organ. Hence the inference, that every system may be affected singly. Post-mortem examinations demonstrate it to us, since it shows, that almost all the local diseases have each their seat only in one particular tissue of the affected organ.

Let us take for example the lungs. These organs are composed of the pleura, of the parenchymatous structure of the lungs, and of the internal membrane. In pleurisy, the pleura only is inflamed, the pulmonary tissue and the mucous membrane remain untouched. In peripneumonia, it is, on the contrary, the parenchymatous structure of the lungs, whilst its two membranes are healthy. In the same manner catarrhal cough is exclusively confined to the mucous membrane, whilst the pulmonary tissue and the serous membrane are sound and healthy. We may reason in the same manner in relation to all the other organs. The affections of a serous membrane extend throughout and are common to all its parts: and indeed, the ancients mistook, in relation to chronic enteritis, in considering it as entirely located in the external coat of the intestines; it spreads itself always all over the peritoneum. However, at the bed-side of the patient, this manner of considering diseases would seem inconsistent, since, for the supposed affection of a single tissue, the whole organ appears to be

affected. Thus in the inflammation of the peritoneum which covers the stomach, this organ is affected with vomiting. One does not know how to explain so constant a sympathy; but the affection of one single tissue only, is nevertheless true.

When we are familiar with diseases, in order to distinguish them we must bear in mind three kinds of symptoms. The first belongs exclusively to the affected organ, the second depends upon the surrounding organs, and the third is general. Thus in pleurisy, the pain in the side, which belongs to the pleura, must be arranged with the first class; the oppression and the difficulty of breathing which belong to the lungs, are comprised in the second; and lastly the state of the pulse, and that of the secretions, compose the third.

In chronic diseases, the principle that we have just laid down referring to the singleness of the affections of the systems, often is apparently contradicted, since, when these diseases are of so great violence as to cause death, commonly the whole substance of the organ is found *morbid*. But this general malady is always owing to a principal affection which has been developed in one of its tissues, and the state in which the others are found, after death, is only consecutive. Thus in cancer, the disease commences by a small moveable tumour in the cellular tissue of the breast; it is soon engorged and adheres; its progress continues; the muscles ulcerate; finally the surrounding bones grow carious, and the state exhibited by the injured part towards the end, is only a consecutive effect of the primitive affection. This example is sufficient to establish the progressive stages of every kind of chronic diseases, either of those which are seen on the exterior surface, or of those, the phenomena of which takes place within. In cancer of the stomach, it often happens that the affection extends itself to the whole peritoneum by the medium of the part of this membrane which immediately covers this organ; some-

times the liver also in this case becomes tuberculous. It is an essential difference between acute and chronic diseases, that the symptoms of the former are only produced by the sudden affection of a single organic system, whilst in the latter they are caused by a slow alteration of the whole organ.

All the chronic diseases do not propagate themselves in an equal degree. Cancer is very susceptible of it, whilst the arterial ossification never spreads.

CHAPTER III.

Of the Alterations of the Fluids.

ALL that we have heretofore said, refers particularly to the alterations of the solids; let us treat now of those of the fluids; which are as frequent as the first, but much less known. Every one knows what great importance physicians have ascribed to them. Almost all have made them the seat of diseases; but if we compare what they have said of them, with what examination teaches us, we shall soon see how illusory was their theory. In this respect pathological anatomy has as yet much to do. Their different alterations can not be observed with the same precision as in the solids. Abandoned to themselves, the fluids soon experience new alterations, the same does not happen in organic affections of the viscera.

In order to facilitate the study of the maladies of the fluids, we will divide them into two classes: those which exist in a normal, and those which are formed in a pathological state. We shall speak, at first, in a general manner of the alterations of the fluids which exist in a natural

state. These fluids are of three kinds: the *circulating*, the *secreted*, and the *exhaled*.

ARTICLE I.

Of the Alterations of the Circulating fluids.

The blood undergoes singular and numerous variations in diseases; they can only be known by the examination of the corpse or of the blood after venesection. Indeed the quantity of blood is very variable in different bodies. In general it is very abundant in persons dead of asphyxia, and in every kind of death which terminates life instantaneously, such as apoplexy &c.; in other affections post-mortem examination presents hardly any, such is the case in chronic diseases, which waste the vital forces for a long time, as phthisis and all those which induce marasmus or dropsy; hence the pulse, in such cases, is very small towards the end, and the arteries contract on themselves. Finally, there are other diseases which hold a middle course in this respect.

The colour of the blood differs materially in different diseases. In almost all cadavers it is black, in whatsoever part it is found.

It is particularly in its consistency that blood differs. Certain diseases change it very much; scurvy, putrid fever, and asphyxia render it always very fluid. Other affections concrete it. The polypus is nothing more than a bloody concretion, formed in the large vessels or in the heart. The ancient physicians ascribed much importance to it, and attributed to it many deaths produced by very different causes. Morgagni, Bonnet, Lieutaud, Viq-d'Azyr, relate observations of polypus, in which we perceive that they entirely mistake in ascribing the death to a concretion utterly passive in the malady; they had taken the effect for the cause. In the examination of almost any subject,

similar bloody concretions may be seen. We may distinguish two kinds in the heart. Sometimes they offer either a white or a yellow mass, but without consistency, and we meet with them almost always in this manner in subjects dead of a slow disease: in sudden death, on the contrary, the clotted blood is very hard, affording resistance, as if it were fibrous, and very different from the first.

It would be necessary to compare the phenomena exhibited in the dead body with the symptoms of the malady; but under this relation, we see that medicine has made very little progress, and we meet with very few observations in which in this mode of inquiry physicians have not taken the effect for the cause. Indeed, if the symptoms were always produced by this circumstance, they would be present in all subjects. Lately at the Hotel-Dieu there was a patient with all the symptoms of a disease of the heart: suffocation, particularly towards the evening, and on the approach of any change in the weather; obstruction in respiration, smart pains in the epigastrium, on pressure. The symptoms had always increased without paroxysms, which is not common in maladies of the heart; at last the patient expired on a foggy day, the approach of which the augmentation of his pains had predicted. When he was examined, the lungs were found very healthy as well as the heart and its valves; but there existed in the right ventricle a coagulum of blood very hard, and adhering very closely to its parietes. It appears that the bloody concretion had a part in this malady. We may easily believe the possibility of the existence of these clots during life, from their analogy with those which are ordinarily contained in aneurismal sacs.

Nothing as yet, very general, can be said on the changes of the nature of the blood in diseases; on this subject we are confined to a few facts. All diseases marked by strength, such as inflammation, present in the blood which is drawn during life, a buffy fibrous coat, called pleuritic. We

know that physicians who have admitted the thickening of the blood, have made use of this coat to explain the diverse phenomena; but the part they have caused it to act is entirely illusory. It is only formed when the blood is out of its vessels. However, it seems often that the blood participates in the malady without our knowing precisely its mode of influence. In all protracted diseases, the blood loses, in part, its coagulating property and assumes opposite characters. In putrid fevers does it putrefy in reality? Authors have exaggerated respecting this; but the prostration of strength, the facility with which the cadaver putrefies in these diseases, every thing seems to prove that the putrefying principle has passed even into the blood. It is also evident that in local affections, the humours have a tendency to putrefy before the death of the solids. In the inflammation which terminates in gangrene, ordinarily the fetid smell is exhaled before the solids are in a state of mortification.

As to the other alterations of the blood, there are many which it would be difficult to classify under any general heads. In jaundice the blood takes on a yellowish colour. In general, in all diseases it is the blood which colours the lips and cheeks, in a peculiar manner for each of them, and which enables us often to recognise them.

From all this we must conclude that the fluids almost always participate in the diseases of the solids. The general *consensus*, which seems to be wanting in certain cases, would suffice to make us think so. As to the other circulating fluids, they also most probably are altered, but we know less about them.

First, respecting the chyle, observation ascertains nothing; the same thing is the case with regard to the lymph, of the alteration of which so much has been said: even in our days affections entirely different are mistaken for these diseases. What is called lymphatic engorgement of the articulations is only a disease of the cartilages.

ARTICLE II.

Of the Alterations of the Exhaled and Secreted Fluids.

We will not consider here in a very minute manner the alterations either of the secreted or the exhaled fluids; but we will treat of them more particularly in the article of their respective organs. Nevertheless, the alterations of the latter may be divided into two sections. Sometimes their augmentation has for cause the malady of the organ which furnishes them, sometimes the affection of other neighbouring organs. In the first case they almost always change in their nature; sometimes they present flakes, at others it is only a milky serosity. The same thing happens with respect to the secreted fluids; thus the affection of the neighbouring organ determines a more abundant secretion, and the direct affection changes its nature, as exemplified in the bile. Such are the alterations of the fluids which naturally exist in the animal economy.

ARTICLE III.

Of the Fluids formed in a Pathological State.

We have already said that there existed other fluids formed by diseases, such as pus, which is different according to the case. It is not the same in a catarrh and in a phlegmon. There are yet others of different kind in cysts, hydatids, and wens, the humour of which is always more or less thick. We will treat of them in the article concerning each of these affections.

CHAPTER IV.

Of Inflammation.

INFLAMMATION is so common a disease, that it would be well to give an idea of it before we describe the alterations of the diverse systems. All authors, ancient and modern, have spent much time on the subject of inflammation. We will not examine the many opinions of every one of them, on this subject, we will simply speak of that which observation shows us. Before we treat of it, we will briefly recall to mind the different organizations of different parts of the body. Every system possesses a substance of its own, surrounded with a general tissue composed of cellular texture, nerves, blood vessels, &c. The greatest number present, in a sensible manner, arteries and veins, and an extremely abundant capillary tissue; such is the case with the skin, muscles, &c. Others, on the contrary, present no vessels in an appreciable manner,—such are the bones, tendons and aponeuroses. In general, wherever the capillaries abound, besides nutrition, there is also a peculiar function which goes on, as in serous membranes, in which exhalation takes place. We must not lose sight of their peculiarities, for the frequency and intensity of inflammation is always *in the direct ratio of the number of the blood vessels*. As to vitality, we know that every system possesses its own particular mode of existence. That of the cellular is entirely different from that of the mucous, which is owing to the diversity in the vital properties of each.

This granted, it is easy to know what we understand by inflammation. We say that a part is inflamed whenever

it is red, painful, hot, and tense; but these four symptoms, although very frequent, nevertheless do not always exist. In order to understand well this disease, it must be first briefly considered in each system, beginning with its most simple stage, and ascending to its greatest complications. If, for example, we take inflammation in the cutaneous system, we see that it is capable of passing through every possible stage. The redness caused by a slight irritation, by the part being too near the fire, is already the rudiment of inflammation, already we observe in it a preliminary change in the sensibility of the part. It is never till after this change that the other phenomena manifest themselves. In bringing thus together all the inflammations, in which the vital forces are constantly exalted, we are inclined to draw the inference, that the augmentation of the vital forces performs an active part in the disease, and, that it is the cause of it. The afflux of the blood is produced by the augmentation of the sensibility; the colouring part of this liquid passes into vessels in which it did not circulate before. This phenomenon is apparent in the serous membranes. When inflammation is greatest, then effusion seems to take place, and no longer permits us to trace the red vessels, but presents only irregular spots more or less large, as we see in the interior of the lungs in peripneumonia. If inflammation becomes still more intense, then there happens another phenomenon, it is heat, which commonly appears more considerable than it really is, since the thermometer indicates that it does not surpass the natural temperature by more than two or three degrees. The feeling experienced by the patient is also very strong. The disengagement, more or less abundant, of caloric, is remarked not only in inflammations, but also in every part where vital energy has been excited. It is not our object to explain here this phenomenon.

If the inflammation increases to a greater degree, then to all these symptoms are added a febrile disturbance, a

phenomenon which always succeeds great excitations; sometimes it precedes and at other times follows the inflammatory accession. This fever is entirely different from *idiopathic fevers*. Another symptom which accompanies inflammation, is swelling, which is more or less considerable, according to the greater or smaller determination of blood that produces it. From this we see that this circumstance is only accessory and must always vary.

Inflammation varies also according to two principal circumstances: 1st. according to the diseases, with which it is complicated: 2d. according to the system in which it is located.

Inflammation often becomes complicated with affections of a more or less severe nature, the symptoms of which, sometimes, are so intense as to conceal the primitive malady; thus the signs of inflammation may unite themselves to those of adynamia, as occurs in many examples of putrid peripneumonia, and in puerperal fevers, which are sometimes associated with putridity; and in phlegmon, which is often succeeded by mortification. We might mention examples of these complications in the inflammation of each system. It is seldom complicated with ataxia; nevertheless, we have seen after several pleurisies a metastasis to the brain occur, but which lasted only a short time. A complication very common to inflammation is gastric disturbance; in almost all the hospitals, there occur very few inflammations which are not accompanied, from the beginning, with this affection. Besides, in gastric difficulties it is very necessary to distinguish what belongs to the liver, and what to the stomach. As to the symptoms, affecting the mucous membrane, they seldom are associated with inflammation.

The other systems feel more or less the influence of the local affection. The organs suffer by it more or less; thus in peripneumonia, the increased action of the heart pro-

duces fever; the stomach becomes deranged by sympathy; very little urine is passed, and the skin becomes dry. If in the first outset of severe inflammations we examine the condition of the organs, it will be found that all are more or less injured in their functions.

Such is inflammation considered under the relation of its complications. Now let us see its differences according to the system which it affects. Writers have not had regard to this distinction; nevertheless, it is an essential one, and the difference of the inflammation of one system from that of another, ought never to be overlooked.

First, all the systems which are very vascular, such as the cellular, mucous, serous, &c. are very subject to become inflamed. Those which present a contrary disposition; such as the osseous, the cartilaginous, the tendinous, almost never become inflamed. In this respect, we see, therefore, that the organization of the tissues influences the character of the different symptoms. The pain caused by the inflamed cellular tissue no wise resembles that of the skin in this state; the pain then, produced by inflammation, has a peculiar mode according to each system. Redness and heat observe, also, this relation; thus the skin becomes coloured by the least irritation, whilst, on the contrary, a considerable time is necessary for the surfaces of the serous membranes to become reddened. The immediate cause of this redness is obvious in certain systems, but in others, where we observe no blood vessels, it is difficult to explain it; thus we are ignorant of the inflammatory condition of the organs having few blood vessels, such as the bones, cartilages, and tendons. Heat presents also a different character according to the system inflamed: in erysipelas, it is acrid and pungent; in phlegmon it is augmented, but it has the ordinary type. Rheumatism offers also another kind of it. The above considerations must be sufficient to prove that inflammation is not the same in all the systems.

Inflammation is susceptible of terminating in three different manners: 1st. naturally or by resolution; 2d. by suppression or discussion; 3d. by suppuration or other malady.

Inflammation, in its natural stages, terminates in resolution. At first it increases to its maximum, then it decreases and resolves itself. These phenomena rest upon, and have reference to the principal symptoms. The first thing which disappears is the fever, then the redness, the tumour, and finally the pain.

The period of the resolution of different inflammations, is very uncertain and variable, and although the diseases have a general type, it is so modified that they all differ from each other. First, resolution varies according to the complications, and this renders it more or less quick in its progress, it varies also according to the system affected, because its organization and vitality differ from that of others: thus in the system in which vitality is most energetic, resolution will be also more prompt, as in the muscles, skin, &c.; on the contrary, in the bones, and cartilages, in which life seems hardly appreciable, inflammation passes through its different stages very slowly; in other parts it would be chronic, whilst in the latter it is simply acute.

This difference is not only remarkable in spontaneous inflammations, but even in those which produce the *solution* of continuity resulting in cicatrization. We know that it takes forty days for a bone to unite, whilst the skin cicatrizes in six. This difference in the duration of resolution exists even between systems gifted with greater vitality: thus the serous is remarkable for the rapidity of its inflammation, whilst in the tissue of the liver, and in that of the kidneys, inflammation is much more slow.

The intensity, therefore, of inflammation, corresponds to the degree of vitality of the different organs.

We know also several other accessory causes which

quicken or retard resolution, and these are treatment, temperature, and temperament.

The inflammation which terminates by resolution, presents a very common phenomenon; it is, the augmentation of the secretions, which is called *crisis*; we will not seek here the cause of it, we will only say, that sometimes it is a copious sweat, and at others a mucous expectoration, &c., according to the part affected. This excretion is always a favourable sign, but it is impossible to determine its relation with the disease; it is as much unknown as the phenomena which precede it. In this respect, it must be observed that all inflammations do not terminate in this manner. Inflammation seems subordinate to the system that it affects. That of the mucous tissue is easily ascertained by its excretion, but it is impossible to judge of it, in the same manner, with regard to the osseous system.

Sometimes inflammation is stopped in its progress through its natural stages; and this sometimes is an effect of the disease, and at others of a means employed by art, as in cases of burns, treated by discutients. We can not often at once suppress inflammations; besides, in general, this practice is dangerous. We know often how fatal it is to repel an erysipelas; and this is the reason why now they are almost always abandoned to their natural course: the same is the case with phlegmon, &c. This phenomenon is not peculiar to inflammations, for all maladies, imprudently *suppressed* are often transferred to another organ, where they produce a more fatal affection, and even death. What dangerous consequences do not happen in interrupting the first stages of an intermittent fever, in the repelling of small-pox, or of a simple catarrh? Nevertheless, it is evident, that, in those maladies in which experience has taught us, that it would perhaps terminate fatally, if abandoned to nature, we ought in these cases to seek to translate elsewhere the excitation, as in peripneumonia by the use of blisters.

There are many inflammations which come on spontaneously. There are others the nature of which seems moveable, and which shift alternately from one part to another; such is acute rheumatism. This depends also upon the different systems; thus the cutaneous often presents these metastases, whilst the osseous never presents any. This spontaneous suppression was known to all the ancient physicians.

Inflammation terminates also in other diseases, such as suppuration, and chronic inflammation. When resolution does not occur, suppuration almost always follows; but it is impossible to foresee it, since the inflammatory progress is the same; besides, the systems are more or less inclined to this termination. The cellular, serous, and mucous tissues, are very prone to it; others, on the contrary, never suppurate, such are the tendons and bones, the inflammation of which is, as yet, unknown to pathologists.

Two principal causes singularly modify suppuration; these are the diverse complications, and the nature of the affected system. Certain systems, as we have already remarked, are very much inclined to suppuration, and in these, inflammation makes very rapid progress; others, on the contrary, seem very little susceptible of it.

Even the mode of suppuration differs in each system; in the mucous, it is only an increased secretion of the glands subjacent to the membrane. In the serous, on the contrary, it is only an extraordinary exhalation, sometimes mixed with flakes, without our ever perceiving any erosion on the surface. As to the pulmonary or cellular system, it is very difficult by mere inspection to determine how suppuration goes on. Almost always the pus is infiltrated in the lungs. In the skin, the pus gathers in small abscesses; in the cellular tissue, it forms a considerable sac: the serous tissue never forms abscesses in its cavities. Thus we see, that the nature of suppuration differs according to the particular system. It is not, therefore, a function, as nutrition, which every where takes place in the same manner.

The nature of the pus varies singularly, although we confound all its different kinds with that which is generally produced in the cellular tissue; but in no system does it appear the same. At times, it is a limpid serosity, at others, is mixed with flakes; sometimes it is a false membrane; finally, at others, it presents the consistence of pap (*bouillie*). Hence comes the erroneous idea we form of sanies. The pus coming from a certain system, might be considered a true sanies, whilst it would not be thought so, if it proceeded from another.

The symptoms which are produced by the existence of this fluid are also different. In the cellular tissue, it is manifested by a heaviness and peculiar tension; upon the mucous surfaces it produces an irritation which urges us to remove it, as in coryza. It never remains with impunity in the bones; it causes in them a very peculiar pain and injuries, when it is not evacuated. There are some parts where it may remain without producing any great inconvenience. After pleurisy, a person may retain pus in his thorax, for a long time, without experiencing a very painful feeling.

Induration has been represented by the ancient authors as one of the terminations of inflammation; but seldom does it succeed this malady, and instead of it, we will treat of a disease much more common in the termination of an acute inflammation, namely, chronic inflammation; this termination is the most frequent after resolution and suppuration, particularly in the internal organs.

This is a disease in which the inflamed parts present every where an aspect nearly alike,—but in which the principal symptoms such as the pain, and the heat, experience a sensible diminution. For the better understanding of this termination, we will relate a few examples.

Sometimes the inflammation of the peritoneum terminates as follows: the inflammatory symptoms diminish, but the abdomen remains obstructed, and sensible to pressure:

vomiting occurs from time to time; there is tension and an obscure pain. This is common in peripneumonia. Inflammation, after having run through its stages, towards the end experiences a remission; the symptoms remain little appreciable, but the pain in the side continues and hinders any considerable motion. This disease commonly terminates in dropsy, or phthisis pulmonalis. In the mucous system, the chronic inflammatory affections are extremely remarkable. Nothing is more common than to see acute rheumatism become chronic.

There are material differences between these two species of inflammation. The chronic one never becomes complicated, because its complications being acute can not last as long as it. The termination of the chronic inflammations varies also according to the system; in the serous it ends almost always in dropsy; in the lungs, in phthisis pulmonalis; in the mucous membranes, by dysentery. It is often the case that the patient dies.

Inflammation may also terminate in other maladies, such as steatoma, &c. But we have not a sufficient number of observations on this subject, to justify us in speaking of it. In conclusion, the last termination is gangrene. It also presents differences according to the systems affected. It is never to be met with in cartilages, nerves, nor bones; other systems are more prone to it, as the cellular tissue, the mucous and serous membranes, and the skin. This termination may be brought about by two different causes; 1st. by its peculiar nature, 2d. by excess of inflammation.

Inflammation which bears an adynamic character, often ends in gangrene; but this is subordinate to the general or local influence of the complication. In the second case, there is gangrene. Thus, it is not observed in putrid peripneumonia, but when it is a local complication, often the part putrefies, as in anthrax. This complication is extremely variable in its intensity. Sometimes it mortifies sud-

denly the part; at other times this putrefaction does not take place.

Sometimes, when life is too active in the part, gangrene is also a consequence. This accident is more to be feared in the country than in cities. Besides, we must carefully distinguish putrefaction from gangrene, to which antiseptics are not opposed.

CHAPTER V.

Diseases of the Serous System.

WE have already remarked that the diverse systems of the animal economy, in whatever part they are to be met with, present always analogous diseases. Therefore, it is indifferent with which of the systems we begin. We will however select the one the affections of which are most known. The serous, glandular, and mucous systems are those which present themselves.

The serous system is, as every one knows, composed of a certain number of membranes which cover the exterior of several organs. They form sacs without any opening, and offer two surfaces, one of which is smooth and polished, and opposes its surface to itself; and the other adheres to the organ which it envelops, and to the neighbouring parts. These membranes are especially composed of cellular tissue, absorbents, and exhalants, and in this respect, they have the greatest analogy with the cellular tissue, from which, however, by their affections, they are very distinct. In a healthy condition, they do not enjoy animal sensibility; in the inflammatory state, it exists in the

highest degree. They follow in their development the progress of the organs which they surround.

The diseases of this system, as those of others, are referrible to two general classes: the *essential* and the *symptomatic*. The first of the essential affections of this system is inflammation.

ARTICLE I.

Of the Inflammation of the Serous Membranes.

Few systems, if we except the mucous and the cellular, are oftener inflamed than the serous; but all the membranes which compose this system are not equally susceptible of it; the following is their order in this respect: 1st. the pleura, 2d. the peritoneum, 3d. the pericardium, 4th. the tunica vaginalis, and lastly, the least frequent of all, the arachnoid.

Here, the causes of inflammation are extremely varied: in general, we shall never pay any attention to remote causes; among the proximate ones is particularly the suppression of transpiration; this is especially the case with regard to the pleura and the peritoneum. These causes act, not on the affected membrane, but on the neighbouring organs. When the disease is developed, these are the characters which distinguish it: at first it is accompanied with all the general phenomena; fever, chills, sweating; in general, it is singularly variable. A very sudden attack is manifested by an excessive pain of the part, as we see in pleurisy. In no system is the pain more keen; the stages succeed each other with an astonishing rapidity; in three or four days the disease is determined: moreover, the concomitant fever, which is slight in the affections of other parts, is here very intense; and the danger is always more manifest. This inflammation influences also the condition

of the organs which it covers; besides, these symptoms vary singularly.

As to the condition of the surfaces of the inflamed serous membranes it is difficult to determine during life. Nevertheless, in the operation of hernia, and in some experiments on dogs, the peritoneum has been observed in a state of inflammation; it was then, extremely red. As to tumefaction, it is not appreciable, and is only a thickening of the membrane. Inflammation in this system, as in every other part of the body, goes through the same series of stages, if we except adhesion, which exclusively belongs to it. This phenomenon has without doubt its origin in the serous membranes, from the suppression, for a considerable time, of the fluid which was exhaled before, caused by the inflammation, which permits the two surfaces of the membranes to contract adhesions. This termination accompanies always those by resolution. These adhesions are of two kinds: some have for means of union a species of albuminous matter, in the form of a false membrane; the adhesions, properly so called, are those in which the two membranes seem to blend themselves at their surfaces.

All serous membranes are not equally susceptible of this adhesion. The pleura presents this phenomenon in two thirds of the cadavers examined in the dissecting rooms. Next in order comes the peritoneum, which sometimes adheres to the diaphragm and to the liver, seldom to the intestines; then follows successively, the pericardium, the tunica vaginalis, and the arachnoid.

We see by this gradation, that those which are most susceptible of inflammation present, most commonly, adhesions. These are of four kinds: in the first, the two parts are so very intimately united that we cannot distinguish them. The pericardium having been found in this state, has caused doubts to arise about its existence. In the second species, the membranes are united in a more loose manner; in the third, there are a multitude of small fibrous

prolongations, which extend from one surface to the other. In the fourth, there are also bands, but larger, flat, and disposed in such a manner, that one would think them natural. Can we ascertain during life these kinds of adhesions? Writers have described as a sign the constancy of the pain; but this only indicates the remainder of inflammation, which lasts more or less time. Besides, this affection is oftentimes without danger.

Another mode of termination of the inflammation of the serous membranes is suppuration. Certain signs make it known. When the disease passes the sixth or eighth day, and the patient feels a local *weight*, we then presume that suppuration is formed. It is somewhat rare to find then in the serous membranes only a pure fluid exhaled; commonly it is mixed with an albuminous matter, which gives to it the aspect of a lactescent serosity; at other times floating flakes, more or less large, are met with; as in puerperal fever. Finally, sometimes, in children who have died from inflammation of the pleura, we find a matter absolutely analogous to pus. We find, moreover, but rather seldom, a kind of false membrane, produced by an albuminous matter more concrete than in a natural state. Lastly, the serous fluid degenerates so much, at times, that it assumes a bad colour and smell, as we see, sometimes succeeding inflammation of the lower abdomen. These diverse fluids may remain for more or less time upon their respective surfaces; sometimes we find those which have existed for more than six months. In the chronic inflammation of a serous membrane, ordinarily the subjacent organ is affected, whilst in the acute it is never so. Further, the suppuration of these membranes is almost always fatal. Nevertheless, resolution sometimes takes place; but it is very seldom.

Gangrene is another termination still more rare than the others. The part in which it most frequently occurs, is the peritoneum; even on the examination of the cada-

vers, this membrane is merely red. Besides, the black colour does not always indicate gangrene.

ARTICLE II.

Of Chronic Inflammation of the Serous Membranes.

Another termination of acute inflammation in the serous membranes, is chronic inflammation, called by the ancients induration. There are few tissues in which it is more common. It would be difficult to determine by the symptoms, the transition from the acute to the chronic, because their remission is not sufficiently appreciable. Such a termination protracts the disease to the fortieth or fiftieth day, sometimes even as long as three or four months. These epochs are very variable, and hence impossible to be determined precisely. The chronic inflammations of the serous membranes do not always succeed acute inflammation; they may be produced by a sudden and imprudent discussion, as well as by the affection of a neighbouring organ. We have seen also one membrane communicate its affection to another, as the peritoneum to the pleura. However, these simultaneous affections are rare in this system, and because the parts which compose it, are seldom near each other. In the others, on the contrary, this phenomenon is much more frequent. Often a catarrh of the nasal passages extends to all the mucous membranes, which by communication, cover the inside of the stomach, lungs, &c.

Moreover, the effects of these slow inflammations in the serous membranes, are, an obscure pain and analogous symptoms which often deceive us in regard to their true nature, because formerly physicians attended only to the dropsy they produced. There is always more or less derangement in the organs which they cover. A remarkable effect of these inflammations, is a real dropsy augmented by

exhalation. When these dropsies have reached their last period, it is often difficult to perceive whence they proceed, and to decide whether they are produced by the affection of a neighbouring organ, or by that of the membrane itself. We must have recourse to the preceding circumstances; for, symptomatic dropsy begins very differently from the idiopathic. Besides, as we have already observed, almost always in that dropsy which depends on the organs, the cellular tissue is infiltrated, whilst in the other, the serosity is confined to the cavity of the membrane. It is the same thing with respect to encysted dropsies.

The fluids produced by chronic inflammation vary singularly in their quantity, consistency and colour; they are seldom pure, almost always troubled, lactescent, &c. A phenomenon also very common to these affections, is hemorrhage, in which the blood passes *at once* without any change into serous cavities: we then find them full of a reddish serosity, sometimes in so great a quantity, that the blood seems clear, always fluid, and without any coagulation. How can that be? It is evidently through the exhalants, for we perceive no erosion of the membrane. This hemorrhage is then manifestly passive, and must be classed with those of the mucous membranes. We sometimes meet with these hemorrhages after acute inflammations; but writers have not indicated the causes of them.

Such are the principal effects of chronic inflammation of the serous membranes, which sooner or later destroys the patient.

At the time of post-mortem examination, these membranes are generally a little swollen, and thickened by two or three lines. In such cases the pain will have been sometimes general and at others partial.

ARTICLE III.

Of Miliary Eruptions of the Serous Membranes.

Serous membranes are also subject to other essential affections, and which belong exclusively to them. There is first a miliary eruption, resembling itch, which writers have not considered in a general manner. Morgagni speaks of a peritoneum covered with these pustules; but he considered them to be symptomatic of other diseases. We often meet with them in the dissecting rooms; they are observed on all serous membranes, but particularly on the peritoneum. The whole surface of this membrane is then very red; and from it rise small tubercules extremely variable in their size and figure. They are found full of a steatomatous substance, and they are almost always accompanied with dropsy. Some have taken them for chronic enteritis; perhaps it is only a variety of inflammation. Besides, a sufficient number of comparisons, as yet, have not been made between the observed symptoms and post-mortem appearances.

A negro affected with a considerable looseness, caused it to cease by a repellant glister. From that time, there occurred tenesmus, dropsy of the peritoneum, tension of the intestines, and violent pain in the abdomen. Natural and regular passages were again re-established. There was no infiltration in the extremities. It was attributed to a chronic inflammation. Purgatives and diuretics were administered to bring back the former looseness; but the dropsy did not diminish, the patient grew weak pretty rapidly. At the examination of the corpse, the abdominal organs were found healthy, but the peritoneum was found covered with miliary eruptions full of serosity mixed with whitish flakes. We are ignorant of *the nature of* these eruptions and their cause. Some physicians have said that itch and small-pox can be thus reperculated.

ARTICLE IV.

Of Spots and Ossification of the Serous Membranes.

There exists also some other affections peculiar to the serous membranes; but they are very little known. The pericardium is sometimes covered with whitish spots on the cardiac part. One would be inclined to think that they are inherent in the membrane, but they may be easily removed; moreover, they never present in themselves the symptom of any disease, and they are met with in healthy subjects as well as in pathological cases: this affection particularly belongs to the pericardium.

Ossification in serous membranes is a phenomenon of very rare occurrence; besides there is no pathognomonic sign which may indicate it during life. Sometimes the surface of the spleen becomes entirely cartilaginous, but in this case the peritoneum is nowise interested.

Writers have also spoken of worms being found in the interior of these membranes; but they have either imposed on us, or the cadaverous examination was made after putrefaction had begun; post-mortem examination has shown nothing like it to the moderns.

There are some other affections of the serous membranes, which present peculiar phenomena, such was that of the peritoneum, observed in a man whose primitive malady was not known, and whose belly, very tense, presented on the right side a considerable tumour. It was taken for a steatoma of the liver, and aperient medicines were given. The patient died some days after tapping, to which they were obliged to resort. On examination they found the peritoneum covered with tubercles full of a gelatinous substance having the appearance of albumen. No similar observation is to be found in any writers.

ARTICLE V.

Of Sympathetic Affections of the Serous Membranes.

Of these, dropsies are the most common. They are of two species: the one produced by the affection of the enveloped organ, as in hydro-sarcocele, ascites, &c. the other caused by a general affection or an organic malady which influences the whole system, as in phthisis pulmonalis, affections of the liver, matrix and spleen. We must not regard these terminations of organic diseases, as exclusively belonging to the serous membranes; they are general, and produced by the weakness of the whole economy. Therefore, not only serous exhalations are passive, but also mucous secretions which cause the colliquative looseness; the cutaneous exhalation, which produces cold sweat; and the hemorrhages from the nose, anus, &c. which are the consequence of that pathological condition.

Moreover, all the serous membranes are not equally subject to these symptomatic dropsies. The peritoneum is first, then the pleura, and finally the pericardium, which are the most common seats of them. As to the arachnoid, it scarcely ever contains any dropsical effusion.

In the different acute inflammations, the serous membranes are the seat of a more abundant exhalation? We might draw this inference from its analogy with the skin; but nothing is certain on this subject, because we have had, as yet, very few cadaverous examinations to testify its truth.

ARTICLE VI.

Of the Diseases of the Pleura.

OF PLEURISY.

Whatever be the cause which produces it, inflammation is the most frequent disease of this membrane. Perhaps it is owing to its being near the lungs, which are always in contact with the air; perhaps we ought often to attribute it to a suppressed transpiration. Whatever be the remote cause, it manifests itself by a chill which varies in its duration; to this succeeds a vague sensation of heat, a general lassitude, a keen pain in the side, which sometimes happens suddenly, and at other times it appears only after twenty four hours. In two or three days the disease has acquired its perfect character. These are the symptoms:

Those of the pleura itself are a very acute stinging pain, which has its seat sometimes before, at others behind, but oftener on the side. This pain augments at every strong inspiration, which then produces cough. Often simple pressure made with the finger is painful. Sometimes this latter phenomenon has deceived physicians, who have mistaken it for a rheumatic pleurisy. The patient with difficulty lies on the affected side.

The lungs soon after feel this affection; a cough more or less frequent manifests itself. A want of expectoration has been given as a sign of true pleurisy; nevertheless, often it is humid, especially towards the last days, when the patient expectorates more or less. The expectoration is bloody, but at last it becomes pure. Respiration is difficult, but very different from that in peripneumonia; for in the latter, strong inspiration is possible, although painful.

As to general characters, the redness of the face varies singularly. Sometimes the cheeks are red, at other times they will not have changed their colour; in peripneumonia,

commonly, this redness is very constant. The pulse, strong and full, is sometimes unequal on the diseased side. The *primæ viæ* are almost always in a good condition, and when gastric phenomena present themselves, it is a complication and not a symptom. The state of the secretions and exhalations varies singularly; sometimes they diminish at the beginning and augment towards the end. Strength is very little impaired.

From these symptoms we shall be able to distinguish pleurisy from peripneumonia, however little separated and distinct may be the inflammations of the pleura and lungs. In reading what writers have left to us on this subject, we see that several of them have regarded as a symptom, what was only the effect of death, that is, the engorgement of the lungs. They have not known how to distinguish the very different consistency which it acquires by inflammation, from simple sanguineous infiltration.

The essential characters which distinguish peripneumonia from pleurisy are: in the former, the face has a constant redness, sometimes even a livid tint, which is a bad omen. In this affection strong inspiration is impossible, whilst in pleurisy it is only very painful. Exterior pressure, always very sensible in the latter, is scarcely perceived in the former. Percussion in peripneumonia gives an obscure sound; the character of the pain in pleurisy is more keen, and in peripneumonia more obtuse.

There are cases in which these two diseases complicate themselves; then, there result from them, mixed symptoms.

Inflammation of the pleura terminates as in the other serous membranes. If it is by resolution, it is on the sixth, seventh, eighth, or ninth day; then there happens a distinct remission, and more abundant expectoration. Often there occurs a critical evacuation, such as copious sweats, hæmorrhage, &c., but above all expectoration. At other times there happens a metastasis; the pain translates itself

to the shoulder or elsewhere, and it is then a rheumatism. In general, the greatest number of patients retain a pain, more or less obscure, which lasts till the fifteenth or twentieth day: it is the remainder of inflammation which disappears by degrees. Adhesions are another frequent termination, of which we have already spoken.

It is almost impossible, at first, to determine if the pleura contain pus. Writers have, nevertheless, given an infinity of signs in regard to this: first, it is the desire of the patient to lie on the affected side, whilst in the beginning it was precisely the contrary. Percussion is especially one of the best means; it ought to be tried on all sides. Another sign of which writers have not spoken, is the pressure of the abdomen: whilst pressing upon the epigastric region the patient experiences a sensation of suffocation. When these three symptoms are present, we may infer the existence of an effusion. There are other signs, such as starting in sleep; a livid complexion; the noise that the patient hears; and the dilatation of the affected side more than of the other; the fluctuation of a fluid, &c.

The patient almost always dies in consequence of these collections of pus. In examining the cadaver, we find a pus which varies, as we have already observed; but often there occur local derangements in the parts. Sometimes the affected lung loses much of its size and sinks in water; sometimes the heart is pressed forward, and beats as in aneurism; often the hypochondriac region of the affected side projects outwardly.

OF CHRONIC INFLAMMATION OF THE PLEURA.

The chronic inflammations of the pleura are those which are best known. Like the acute inflammations of this membrane, they are totally distinct from those of the lungs. There are, however, some phenomena which are common, such as the cough, but it presents in both cases dif-

ferent characters. In chronic pleurisy, it is not so humid as in phthisis; the pain is not susceptible of shifting; there is no momentary heat in the hands and feet, no nocturnal perspiration as in the latter. There is a difficulty of lying on one side, almost always local dropsy, whilst in phthisis dropsy is general.

The pleura, as well as the other serous surfaces, may also be the seat of miliary eruptions, of which we have already spoken: they end ordinarily by a serous effusion more or less troubled.

The pleura may also contract a chronic inflammation by the contact of diseased lungs. It is also the seat of symptomatic dropsies, more particularly produced by affections of the lungs and heart.

ARTICLE VII.

Of the Diseases of the Pericardium.

These affections are less known than those of the pleura, either because they are very rare, or because the condition of the part is a hindrance to the correct understanding of its diagnostics.

Inflammation of the pericardium can not be doubted, since, after the manifest symptoms of inflammation, post-mortem examination has proved its alteration. However, it is not an easy matter to recognise it, although writers have given several means for this purpose; they are so vague that one can not rely on them. Thus they have indicated the violence of the fever, the pain behind the sternum, fainting, and irregularity of the pulse. All these signs may partially belong to inflammation of the lungs.

As to the terminations of pericarditis, they occur in the same manner as in all the other inflamed membranes; at first by resolution, often followed by adhesions, which

vary singularly, and of which we will say nothing more. Have these adhesions a decisive influence on the animal economy? Is the heart hindered in its movements? If we consult analogy, we shall see that adhesions do not impede the action of the lungs. Nevertheless, certain observations would seem to prove that some bad consequences have resulted from it, such as fainting and irregularity of the pulse, which progressively increasing, have caused the death of the patient. The second termination of inflammation of the pericardium, is suppuration; it is to be found under diverse forms. It is difficult to know the epoch of its formation: we can not judge of its existence but after it is already considerably advanced. The signs presented by writers are, as yet, very obscure. It is a sensation of weight, and uneasiness in the precordial region; in regard to the heart, there is intermission and irregularity of the pulse, difficulty of lying horizontally: a common phenomenon in dropsies of the thorax. In these two cases, the liquid, pushing the organs upward, hinders free respiration. General symptoms are those of effusion; nevertheless, there is a peculiar criterion, which is pressure of the epigastrium, which we have already advantageously employed.

As to the fluid which is found in the pericardium, it varies singularly: sometimes there are false membranes, which unite the two surfaces, or present a smooth or rough surface on the side of the fluid; sometimes the fluid is lactescent, with flakes.

The fluid also is in a greater or smaller quantity, so that the pericardium is more or less distended. Sometimes it determines its thickness; *Friend* has seen it one inch thick, and even four inches.

Gangrene is of very rare occurrence in the pericardium, although some cases of it are cited by *Lieutaud*. There are also symptomatic dropsies caused by the affection of the heart; they also often result from a general affection.

ARTICLE VIII.

Of Diseases of the Peritonæum.

Affections of the peritonæum are of a very common occurrence, and nevertheless writers who have treated of them have filled their works with doubts, occasioned probably, by neglect of post-mortem examinations. They have spoken of the isolated affection of each part of this membrane, of the mesentery, of the epiploon, &c., whilst in the greatest number of cases, the affection extends over the whole surface, a common phenomenon to all the serous membranes, as we have already observed.

OF PERITONITIS.

Writers have spoken very little of the inflammation of the peritonæum in general; they have confined themselves to the insulated affection of the stomach or intestines, to which they have given different names.

Inflammation of the *abdomen*, considered in general, has essentially its seat in the surface of the peritonæum. This extention seems, nevertheless, contrary to a phenomenon quite common in this disease, which is the local pain of which the patient complains. We shall not seek to explain the cause of this phenomenon; we shall be satisfied to observe that it is analogous to many others in the economy; such as in pleurisy, in which the patient complains of a pain in the side; in phthisis, in which he feels a pain sometimes in the back, and at others behind the sternum.

Peritonitis is remarkable for the following characters, of which the first belongs to the peritonæum, the second to the gastric organs, and the last to the whole economy.

First, as to the peritonæum, when the disease has reached its maturity, the abdomen becomes very painful, particularly on pressing upon it; but this pain is very dif-

ferent from that of acute dysentery. In the latter, one does not feel that very distressing pain in the abdomen; there is an abundant and bloody mucous excretion. In peritonitis, the patient is always lying on his back; any other position is painful. Writers cite some examples of these diseases, in which the symptoms have not been appreciable, and in which, nevertheless, on dissection, all the evidences of inflammation have been found. The tension of the right and left hypocondria, is always more or less apparent; often distension (*météorisme*) of the intestines, is a condition which points out a very great difference between peritonitis and dysentery; the subjacent cellular tissue is a little swollen.

The most frequent symptom which results from the sympathy of neighbouring organs, is vomiting, which is not produced by sordes, but by an effect purely sympathetic; sometimes looseness occurs from the same cause, as in puerperal fever.

As to general symptoms, the pulse is feeble, depressed; as to the exhalations and secretions, they vary singularly, and in this respect we have very few certain characters given by nosologists who have treated of this malady.

Besides, this affection may be complicated with gastric obstructions, or adynamia; then the tongue is somewhat black; prostration is extreme, and breath fetid.

Peritonitis runs through its stages with rapidity. The termination is here as elsewhere, and resolution, which is always desirable, is succeeded by adhesions. These do not occur equally over every part; the small intestines are seldom the seat of them. They are common to the convexity of the liver, spleen, to the first curvature of the duodenum, to the arch of the colon, &c. However, these adhesions produce no disorder in the function. Sometimes fatal results have ensued, such as a fold of the intestines adhering to the mesentery and becoming strangulated by a band.

Another termination is suppuration; it always occurs when the patient dies; but it is impossible to determine the period of its formation. The nature of the fluid may present all the varieties, of which we have spoken in treating of the suppuration of the serous membranes in general: We seldom find in it false membranes. As to the termination in gangrene, of all the serous membranes, the peritonæum is the most susceptible: nevertheless it is not a very common occurrence, the pus is then grayish and very fetid.

Peritonitis often terminates in chronic inflammation; the symptoms, instead of disappearing, only experience a sensible remission: there is vomiting from time to time, the pain seems to remit; at times the patient experiences none. There is commonly some degree of constipation, in which this affection is very different from chronic inflammation of the mucous membranes, which produces a continual looseness.

The inflammation of the peritonæum terminates uniformly in dropsy confined to this membrane. The chronic looseness also terminates in an effusion; but it is then a general dropsy. Therefore, we can not, under this relation, confound the affection of the peritonæum with that of the mucous membrane of the intestines.

Post-mortem examination, in what is erroneously called chronic interities, present more or less effused water, containing some albuminous flakes: the small intestines seem sometimes adherent, but they are only united by a more concrete albuminous portion. The chronic inflammations of the peritonæum may also complicate themselves with miliary tubercles, as those of the pleura. They are sometimes of the size of a walnut. We must pay particular attention to distinguish them from small steatomæ, which sometimes develop themselves in the mesentery; they produce no mischief.

OF PUERPERAL FEVER.

Physicians have considered puerperal fever, a disease so common to lying-in women, as a general affection, and consequently they have classified it according to the different characters that it has presented. We shall regard only, in its examination, the peculiarities which it presents during life, and what we find after death. If the fever, which is constant in this case, has been taken for the principal disease, the affection of the peritonæum may at least be regarded as an essential symptom.

Puerperal fever varies in the time of its attack, and in general, it is from the second to the twelfth day, after lying-in, that it manifests itself. This attack is accompanied with phenomena always variable. At first, we have suppression or diminution of the lochia, often violent colics; it is then very difficult of distinguishing to what they belong. When once they are characterized, these are the signs. First, as regards the peritonæum, there is abdominal pain, sometimes toward the loins, at others towards the epigastrium, sometimes in the whole extent of the peritonium. The character of this pain is peculiar to the serous membranes. The patient remains lying on her back. Nevertheless, there is sometimes some remission in the pains, as we have seen in the article on peritonitis. On dissection of the cadaver, we find a real affection of the peritonæum.

As to the symptoms resulting from the neighbouring organs, vomiting is almost always constant; sometimes it is complicated with foulness of the stomach; at others there is only a mere hickup. Some physicians, deceived by this symptom, believed that they now saw in this an affection simply gastric, whilst it is an effect merely sympathetic. In many cases there is a marked looseness, which is a very bad omen. At other times there is constipation. Bloating also, often characterizes this inflamma-

tion; it appears that it is owing most frequently, to the swelling of the cellular tissues subjacent to the peritonæum; however the flatulent distension (*météorisme*) of the intestines may have some influence in it.

Besides the general phenomena common to inflammation of the peritoneum, these are some peculiar to puerperal fever: They are the suppression of the lochia, and the sinking of the breasts, caused by the want of the secretion of milk. The state of the pulse varies. When the affection is simple, it is little characterized; but when the disease is complicated, it then assumes characters analogous to this complication. Respiration is always a little disturbed: it is a very common phenomenon in the affections of the peritonæum, that, pressing the diaphragm upwards renders inspiration painful. The secretions and exhalations vary; in general, we can not determine the signs from them, in every affection. The prostration of strength is extreme. Finally there happens, sometimes, cerebral delirium.

Writers have spoken of a gastric complication of puerperal fever; but the symptoms are very difficult to apprehend. It is often accompanied by adynamia; there is then extreme prostration, black and fuliginous tongue, breath fetid. Fever from affection of the mucous membranes, seldom unites itself with it.

The termination of the puerperal fever varies. Patients often die after the third or fourth day; in general, they live even to the eighth or tenth day. Death is the most common termination of this fever, when the symptoms are very much aggravated. When the lochia yet flow, milk continues to be secreted, and the symptoms diminish, we may hope to save the patient. The emollients and ipecacuanha, that had been very much extolled, avail very little. Blisters, the object of which is to translate the irritation, as the indication suggests, serve only to render the disease chronic.

Post-mortem phenomena are different according to the period of death. When it has been sudden, the peritonæum is very little red; nevertheless pain has been excessive, distension (*météorisme*) very great, which induces us to believe that the blood has escaped by the collateral vessels. On the other hand; we find commonly a lactescent humour, or one containing whitish flakes, of a peculiar nature. As to the matrix we have few observations for judging of the condition in which it is then found. It has been observed, however, that it putrefies much sooner than in any other affection. When the patient has died after thirty days illness, then the peritonæum is inflamed.

Some writers have taken for effused milk, the lactescent serosity that is then found in that membrane; but nothing is more incorrect than this opinion.

Termination by resolution is seldom observed. In well marked puerperal fevers, divers crises by which it terminates have been indicated. As to the nature of this disease every one now agrees in saying, that it is a local affection; the fever accompanying it, is only symptomatic. Sometimes the inflammation becomes chronic; then the symptoms of the puerperal fever cease, and every thing reassumes the character of acute peritonitis.

Writers have treated, in particular, of local affections of the peritonæum; but we very seldom meet with inflammation of this membrane, when it is otherwise than general; although it may begin in a particular place, by virtue of a primitive affection of the abdominal organ which it covers. Nothing is more common, among writers, than to treat in particular, of serous inflammation of the bladder, stomach, &c. They have been the more deceived, as they have taken for symptoms, some signs which, although local in appearance, denote, nevertheless, a general affection.

OF THE SYMPTOMATIC AFFECTIONS OF THE PERITONÆUM.

Inflammation of the peritonæum, is often a symptom of other diseases, as in the greatest number of essential fevers, in which the abdomen is distended, becomes painful during two or three days, and then returns to its natural condition. Perhaps it is by a symptomatic eruption on the surface of the peritonæum, as happens sometimes to the skin: that which would induce us to believe so, are the frequent adhesions that we meet with in many cadavers.

The most common symptomatic disease of the peritonæum is ascites; although physicians have regarded, for a long time as an essential malady. Sometimes, as we have already seen, this dropsy succeeds the chronic affection of the peritonæum; but, oftentimes, it is caused by the organic affection of an abdominal viscus; it is frequently produced by an affection of the liver, often also of the spleen, the matrix; seldom of the kidneys.

It may be produced also by the lesion of a viscus situated out of the abdomen. In these organic affections, dropsy is general, whilst in chronic peritonitis, it is confined to the abdominal cavity, as we have already said.

In the first case the liquid, being more or less copious, is limpid and transparent; several folds of the peritonæum disappear, and give to its cavity an extreme amplitude. The intestinal canal remains free and floating without any apparent adhesion, as in chronic peritonitis. This quantity of fluid acts differently on different parts. On the side of the thorax it presses the diaphragm upwards, and hinders respiration. The skin anteriorly is uniformly tense as a balloon. The liver is either flattened or convex, according as the base of the thorax expands or contracts.

Although this disease is not an essential one, nevertheless there are certain cases in which it develops characters which are proper to it. In an affection of the liver, as long as dropsy is not manifested, certain symptoms are not de-

veloped; but they are perceived as soon as it begins to appear. The condition of the secretions and exhalations is especially influenced; then the urine is in small quantity and has the lateritious sediment, the skin is parched, and scaly, for want of insensible perspiration. Nutrition is badly performed, there results marasmus. The state of the pulse belongs always to the affected organ.

ARTICLE IX.

Of Diseases of the Vaginal Tunic.

All writers, who have spoken much of hydrocele, have said very little about inflammation of this membrane; nevertheless it is real, but less frequent than in the other serous membranes: its adhesion proves the existence of it. In the case of the operation of hydrocele by injection, this adhesion is absolutely analogous to those of the pericardium and heart. When this inflammation becomes chronic, then hydrocele occurs. Miliary eruptions may take place on its surface, as has been observed by Morgagni.

Hydrocele, properly so called, is always idiopathic, and the effusion occurs anterior to the testicle, so that, this organ is behind, and the spermatic vessels within.

ARTICLE X.

Of Diseases of the Arachnoid.

The arachnoid is a membrane essentially serous, and extremely thin. Although it seems, in appearance, to differ very much from the others, it is like them in all the attributes which characterize it.

OF PHRENSY.

The most common affections of the arachnoid membrane are its inflammation. Writers have distinguished two spe-

cies of this disease: The one, which they have said to be superficial, and as it were erysipelatous; the other, more deep-seated, which has been called phlegmonous. This division can not be admitted, for, of all the different parts that the cranium contains, the arachnoid only can become inflamed; never have we found the substance of the brain inflamed; and as to the dura mater, by virtue of its fibrous structure, it is not susceptible of it. Indeed, all post-mortem examinations prove this, because the situation of the purulent serosity is always on the surface of the brain.

The inflammation of the arachnoid may be produced by two kinds of causes: the first comprehends external lesions, the second embraces spontaneous affections.

The external causes which act upon the cranium, when they determine inflammation of the arachnoid, produce the same phenomena as those remarked in spontaneous phlegmasia. We see, that, this division can only be established with regard to the cause. As to spontaneous phrensy, all writers have spoken of it; but they did not know its true seat. In this disease, as in all others of the same species, it begins with pain in the part; the intellectual faculties are confused, a common phenomenon in all cerebral affections; in this case it is only sympathetic. This derangement varies singularly. In all cases, the passions are exalted, rage succeeds, there is a continual agitation. Some authors have distinguished superficial inflammation from the deep-seated, by more or less proneness to sleep; but post-mortem examination has not justified this opinion. The termination of phrensy is generally fatal; death follows after the third or fourth day; a whitish serous fluid is found extravasated in the cavity of the arachnoid, on the surface of the brain. The ventricles seldom participate in the inflammation, although they are interested in the dropsy.

Resolution is generally very rare; and where it does take place, there seldom result adhesions. We must not

regard as such some prolongations which form a sheath to all the vessels which traverse the dura mater and brain.

Although authors have spoken of gangrene, yet this termination never occurs.

We have known some cases in which phrensy has degenerated into chronic inflammation; such was that of a child in whom hydrocephalus succeeded after an acute inflammation of the arachnoid. We find some analogous observations in Morgagni.

OF HYDROCEPHALUS.

Another essential malady of the arachnoid is hydrocephalus, or a collection of water in its cavity. This collection can occur in two different places; in the ventricles, or on the surface of the brain. The disease seems to arise from two causes, either from the affection of the internal surface of the membrane, or from a defect of the exhalants of this surface, and then no alteration is perceived. This proneness is common to the vaginal tunic.

Wherever may be the seat, and wherever may be the cause; the size of the head is always considerable, and the more so in proportion as the child is young. The enormous size of the cranium is the first sign of the disease; commonly derangement of the intellectual faculties accompanies it. The organic alterations are different according to the seat of the collection; when it is in the lateral ventricles, then the cerebral substance is pressed from below upward, and in this case we almost always find the circonvolutions effaced.

When the water is diffused on the surface, the contrary takes place, and the brain is pressed from above downward. If the bones then separate in the womb, all the fluid runs out and the brain with it; this constitutes the acephalus.

In both of these cases, the vault of the cranium presents an extraordinary size, whilst its base is not at all dilated;

the membranes which join the large flat bones elongate and increase in proportion.

The fluid in general is pellucid and transparent; it seldom penetrates into the vertebral column; the origin of the nerves shuts up the communication.

OF THE SYMPTOMATIC AFFECTIONS OF THE ARACHNOID.

The symptomatic affections of this membrane cause it to differ from those of its own species. It only becomes the seat of dropsy, when a neighbouring organ is affected, such as a fungus of the dura mater, a proper affection of the substance of the brain, &c. In the greatest number of ataxic fevers, there is also an effusion; but is it then the effect or the cause of the malady? The latter case seems the most probable. In those affections in which there happens delirium, seldom is there any effusion, as in puerperal fever. As to the other diseases which determine general dropsy, they seem not to influence the arachnoid.

OF SPIRA-BIFIDA, OR HYDRO-SPINALIS.

It is an idiopathic affection of the arachnoid which covers the vertebral canal. It is strictly analogous to hydrocephalus; but it has been very little observed, in consequence of the difficulty which always exists in exposing the vertebral canal. However, we know that it consists in a collection of water which gathers in the cavity of the arachnoid; sometimes it is in all the extent of the canal, at others it is more partial. The spinous apophyses are divided; and if we make a puncture the disease becomes mortal.

CHAPTER VI.

Diseases of the Mucous System.

THE mucous system is composed of a series of membranes, which successively develop themselves over the different hollow organs of the economy. There are two principal ones; one which penetrating through the mouth, eyes and nose, covers the nasal passages, pharynx, bronchiæ, and all the intestinal canal; the other which, entering by the canal of the urethra and vagina, lines all the urinary and genital organs. These membranes differ from the serous in their general organization. They are divided into two surfaces: one, which lines the internal cavity of the organ and corresponds to itself, and is continually lubricated, in a natural state, by mucous; the other, external, is in contact generally with a fibrous surface: sometimes, however, there is an intervening cellular tissue. As to their texture, it has a great resemblance to that of the skin. We find at first a chorion, very thick in some places, and thin in some others; this chorion is covered with a papillary body, the seat probably of mucous sensibility. The epidermis is more or less apparent, according to the different parts. It is very visible on the tongue, whilst it is not to be perceived in the intestines.

The mucous membranes may be regarded as the internal integuments destined to protect the organs against the contact of foreign bodies. As to their vital properties, they vary in different parts. There is always organic sensibility and insensible contractility.

Respecting their alterations, we shall speak of them at

first, in general, then in particular, as we have done in regard to the serous membranes.

The mucous system, like the serous, is the seat of two species of affections. The first are primitive; the others are produced simultaneously with another affection.

ARTICLE I.

Of Inflammation of the Mucous System.

The most frequent malady of the mucous system is inflammation. In whatsoever place the membranes composing it are met with, they present similar phenomena in their phlogosis. These latter are known by the common appellation of *catarrhs*. However, this word has been too much generalized, in referring to them all the increased secretions of the mucous membranes, which sometimes are not the consequence of inflammation.

The distinctive characters of the mucous inflammations, first depend on the manner they begin, and their close relation to the different states of the skin. They are almost always produced by sudden changes of the atmosphere; hence, colds or *catarrhs*, *coryzæ*, &c. This close sympathy is equally evident in other mucous affections. Indeed, we know that a cold application on the temples stops a nasal hemorrhage.

Another character of the mucous phlegmasiæ, is their prevailing frequently as epidemic diseases. A multitude of authors have spoken of it. This is particularly the case in dysentery. This character causes these inflammations to differ essentially from the serous phlegmasiæ, and from those of all the other systems. Indeed no mention has ever been made of epidemic of phlegmon, erysipelas, &c.

The pain in these inflammations is generally less intense than that in all others. In *coryzæ*, there is only obstruction. Another character is that they are almost always un-

accompanied with that swelling of the neighbouring cellular tissue, which we observe in other phlegmasiæ. In dysentery the abdomen is never distended as in enteritis. As to redness, it can not be determined, since, in a normal state, it varies according to the condition in which the mucous membranes are found. However, it seems that this redness is always augmented. One can judge of it by analogy from the inflammations of the mouth. Seldom is there any concomitant fever; and, should it exist, it is never very intense. Moreover, mucous phlegmasiæ can be complicated with all the maladies of which we have spoken in the article of complications of the diseases of the serous membranes.

These phlegmasiæ never terminate without a more or less abundant secretion of mucous; there never happens any adhesion. Whatever may be the cause of this phenomenon, it establishes a great difference between the termination of these inflammations, and that of the serous membranes. The abundant secretion which occurs at the time of the resolution may be also determined by an irritation without any phlogosis having previously existed, as we see by the introduction of a bougie into the urethra.

The mucous which is so abundantly secreted towards the end of the mucous inflammations, varies according to the different membranes and different stages of the disease; thus, that of a blennorrhagia is not like that in dysentery, and the expectoration produced at the beginning of a cold, is not the same as that which takes place towards the end.

Catarrhal inflammations seldom terminate in gangrene, if we except some cases of angina.

Chronic inflammation is a termination of a more frequent occurrence; but there are numberless degrees from the most chronic to the most acute.

We know not the results of post-mortem examination in this disease, for it is seldom mortal; when it has become so, by its complications, a thickening of different degrees

has been observed, and some redness. Sometimes false membranes are formed, such that their dense and inorganic aspect causes us to mistake them for a real tunic. We have examples of poisoning upon record, in which similar substances have been thrown out in smaller or larger quantity.

ARTICLE II.

Of Hemorrhages of the Mucous Membranes.

Another essential affection of the mucous membranes consists in hemorrhages, of which we shall speak in this place, only so far as they are relative to these membranes.

All physicians, till now, had considered them in too abstracted a manner, without observing that, what is true with regard to hemorrhage of one part, is not so with respect to that of another. All the ideas of the mechanicians, who have explained hemorrhages by obstruction, have been overturned by *Stahl*, who has considered matter in a manner too abstracted and metaphysical.

We shall classify the hemorrhages of the mucous membranes according to the parts in which they occur: however, they are divided into two distinct classes; namely, those from rupture, and those from exhalation.

Those of the first species differ entirely from the others. They are always in proportion to the size of the wound, and independent of every kind of vital action. Hemorrhages by exhalation, on the contrary, are immediately subject to its empire. There is another species, almost intermediate to the two first ones; namely, hemorrhoids, the nature of which is yet very little known, and which can not be classified in either of these two species.

Hemorrhages by exhalation may happen wherever exhalants terminate; and indeed they have their seat in mucous surfaces. The nasal passages, bronchiæ, stomach, in-

testines, bladder, &c., may be the seat of them. They sometimes happen also in the serous membranes; for we sometimes find a bloody serosity in the peritoneal cavity in certain cadavers. We meet with them also in the cellular tissue; such are those which produce scarbutic spots. Those of the skin are of a rare occurrence, but not without example. Finally, glands have often been observed to exhale blood.

Hemorrhages by exhalation, in the mucous membranes, as elsewhere, are of two species, passive and active. They are active when they are accompanied with development of the vital forces; thus they have this character in the nasal passages, when we remark a tickling sensation, together with a slight pain and redness. At other times they are utterly passive, as when they are met with at the close of some organic affection characterized by debility.

As to the state of the parts, after death, in which hemorrhage takes place, it does not differ from the natural condition, as it is seen in the matrix, in females dead, soon after menstruation.

There are also hemorrhages which depend upon the disorganization of the tissues, as in cancer of the stomach and matrix; it is not ascertained whether this happens by exhalation or rupture.

All hemorrhages by exhalation are remarkable from the influence that they exert on neighbouring organs. The same is the case with regard to perspiration. We know that the application of a cold body to the belly stops the menses or lochiæ; all strong passion produces the same effect.

The excitation of the mucous membrane of the stomach by an emetic, may equally disturb the menses.

ARTICLE III.

Of Aphthæ.

Another peculiar affection of the mucous membranes consists in aphthæ. These are ulcerated tubercles which appear on their surfaces. They are of two species. The first, which are remarked in the mouth, principally on the sides of the tongue, present themselves under the form of small round and prominent ulcers, covered with a pellicle somewhat thick and difficult to detach; this pellicle has a strong analogy to those which are formed on the amygdalæ, in angina tonsillaris. Sometimes these ulcers are an inch in diameter; they may be essential or symptomatic.

The other species of aphthæ, or sore mouth, has been described by *Wagler* and *Rædcrer*. These are small tumours provided with excretory ducts, which is the reason why we should regard them as small tumified glands. What is certain is, that we find no where any thing analogous to them.

ARTICLE IV.

Of Fungi.

Fungi are a malady proper to the mucous membranes, and consist in a considerable thickening of their parietes. They have much analogy with hypersarcosis of ulcers and osteosarcoma. These fungi display themselves in the sinuses, mouth, nasal passages and matrix, when they are known under the name of polypi. They contain many capillaries in their structure, and when they are cut, blood pours out like a sheet of water. This character serves to distinguish them from cancer with which they have some analogy, since, in the latter the arteries assume a caliber two or three times larger than in their natural state;

moreover it is accompanied with hardness and callosity, which are never to be met with in fungi. A very important work is yet to be accomplished, which shall contain the exact distinction of these different tumours.

Another affection of the mucous membranes, consists in the alteration that they experience when they are exposed to the contact of the air, as is observed in the different displacements that they undergo, in prolapsus of the rectum, vagina, or artificial anus.

Next follows corrugation of the mucous membranes, of which we have an example in gonorrhœa, affecting the membrane of the urethra; and in the œsophagus and stomach, after being poisoned by nitric acid.

The mucous membranes also can be the seat of affections purely symptomatic. They express in their peculiar manner the affection which is communicated to them by other organs. Thus the catarrhs of the thorax may be symptomatically the effect of disease of the stomach; the mucous hemorrhages, in a multitude of cases, may serve to denote other affections; aphthæ are often symptomatic, as in putrid fevers.

The mucous membranes are also sometimes attacked with general maladies, and such as are common to the whole system, as scurvy and venereal.

ARTICLE V.

Of the Diseases of the Conjunctiva.

The conjunctiva differs essentially from all the membranes of its own species in its texture and aspect.

Its inflammation bears the name of *ophthalmia*. The causes producing it are referrible to two classes, namely: the external and internal. In the inflammatory state of the mucous membranes, there is a greater or less degree of redness, and this is so much the more remarkable, as in their

natural state, we perceive no blood vessels. It is especially in the part covering the sclerotica, that this colouration is mostly visible. There is besides more or less considerable swelling, and sometimes it is such as not to permit the eyelids to open. The inflammatory state of the membrane is of longer or shorter duration: nevertheless, we can not say that the most acute ophthalmiæ protract themselves more than ordinary mucous inflammations.

The terminations may happen differently. They never occur without an augmented secretion of the fluid which lubricates the membrane. Adhesion never takes place. The mucous does not proceed from all the surface of the conjunctiva; it seems to issue from the meibomian glands, situated under the eyelids. It is especially in the external angle that it is to be met with, it there dries, and forms what is called rheum. All the symptoms diminish by degrees, but redness persists for a long time.

A termination extremely frequent in this inflammation, is chronic ophthalmia. Then there happens a remission in the symptoms, but the redness still continues. Sometimes this state lasts more or less time; it is subjected to all those influences which can keep up or check it.

Whatever may be the cause of this inflammation and of its duration, the following is the pathological condition determined by it. The conjunctiva becomes thicker, engorged, and sometimes its density is greater than that of the eyelids, producing a kind of inversion of the latter, which is called ectropium.

Hemorrhages of the conjunctiva are very rare: nevertheless, Haller and Morgagni relate some examples. They have even pretended that there were some periodical ones, in cases of suppression of the menses.

Sometimes fungi are observed; often they grow spontaneously. At other times they present themselves in conjunction with a cancer of the eye; they assume then a

volume more considerable, and sometimes produce hemorrhages.

As to symptomatic affections, they are frequent in the conjunctiva: thus, ophthalmia often denotes a venereal virus.

The affections of the membrane which covers the lachrymal bag, may be also referred to those of the eye. This membrane may become engorged under different circumstances. Hence the lachrymal tumour, which, however, may be also produced by many other causes. Sometimes, the disease is complicated with caries of the os unguis; but this accident is less frequent than authors have pretended; besides, it is possible, that the concomitant caries of the bones may be attributed to another cause.

ARTICLE VI.

Of Diseases of the Pituitary Membrane.

This membrane has a peculiar structure; it is thicker in certain places than others, which gives to it a resemblance to that of the digestive system. It is very vascular, hence its frequent hemorrhages. It has some maladies which are essential, and others only symptomatic.

We recognise under the appellation of *coryza*—the inflammation of the pituitary membrane. This affection is ushered in by a more or less lively *pain*, heaviness in the head, difficulty in the passage of air, parched nostrils, and sneezing. The sense of smell is very much altered, often lost. The seat of the inflammation is more or less extensive. Sometimes it is confined to a part of the pituitary membrane; at other times it occupies the whole of it, and even invades the neighbouring parts, such as the pharynx and eustachian tube. At the commencement of this affection, the secretion of mucous is entirely absent; a very limpid and acrid water soon appears, that writers very inconsiderately have

mistaken for tears. This mucous soon acquires consistency, then it returns to its natural state, and the disease terminates. It seldom becomes chronic. Its longest duration is from fifteen to twenty days.

Ozæna is another malady proper to the pituitary membrane. It is a question yet to be decided whether it consists in an ulcer analogous to those of the skin, or only an inflammation; post-mortem examination has not as yet dispelled the uncertainty respecting it. It is probable, however, that it is only an inflammation. At least we sometimes see small ulcers appear in the nasal passages, caused by the revulsion of an herpetic affection, &c.

Hemorrhages often affect the pituitary membrane, which is a consequence of its vascular condition. Sometimes these hemorrhages happen by a rupture, as in concussions, and blows on the nose; but they are oftener produced by an irritation of the extremities of the vessels. These hemorrhages are of a longer or shorter duration, and may be arrested, as is well known, by plugging.

Polypi may also present themselves on the pituitary membrane. Nothing is better known than their accidents and treatment; but we are yet unacquainted with their nature. However, what follows is that which observation has taught us. Two kinds of polypi are distinguished. The one, vesicular, is characterized by its whiteness and softness, by the little pain it gives, and by the swelling that it experiences on exposure to moisture. This species is rarely dangerous, and is never productive of hemorrhages. The other comprehends those which are called hard, and which present very different characters; hardness, rapid growth, pain and spontaneous hemorrhages; the atmosphere has no influence on them. Their progress causes the disorganization of the surrounding parts; sometimes they warp the bones, at other times they erode them, and appear at the vault of the palate, or determine themselves to the pharynx: they may cause deafness and epiphora.

As to the symptomatic affections of the pituitary membrane, they are very few. Sometimes, though rarely, coryza complicates itself with another disease. Hemorrhages especially are thus produced. All the other maladies are idiopathic.

The sinuses are covered by a membrane very similar to the pituitary. They also may be the seat of various affections.

At first, the frontal sinuses may be attacked with coryza; then all the symptoms of inflammation are there developed.

The maxillary sinus is very subject to ozæna. Often, the fluid which is effused in it erodes the membrane, produces caries of the bone, and causes fistula. Finally, fungi are often found in this sinus. They produce the same effects as the effused fluid, and moreover, enlarging the cavity, they produce a deformity more or less obvious.

Finally, continued from the pituitary membranes, there exists another prolongation, which lines the eustachian tube and extends as far as the tympanum. This portion is also susceptible of pathological affections, such as inflammation: then the cavity of the tube is almost obliterated by swelling, the free circulation of the external air, in the internal ear, is intercepted, which causes deafness. A kind of thick residue has been found on this membrane, which probably was only the result of suppuration.

ARTICLE VII.

Maladies of the Mucous Membranes of the Mouth.

The internal membrane of the mouth is almost never inflamed, and when that occurs it is most commonly by continuity, as in angina tonsillaris, in which it may happen that the root of the tongue is interested. In general, this inflammation is the most rare of all those which are re-

marked on the mucous membranes: and indeed it is never symptomatic.

Aphthæ are a disease very common in the mouth, and there is no portion of the mucous system which is more affected by them. It is especially among children that they are oftener to be met with. They are either idiopathic or sympathetic. Often the idiopathic prevail epidemically, and in this respect they are included in the class of catarrhs. Their symptoms are, an inflamed tumour, with swelling, excoriation, hard edges, excretion of little bits of a whitish membrane, that the patient spits out or passes in the fæces; sometimes there is a feverish excitement, dryness, and heat in the mouth.

Hemorrhages of this membrane, generally speaking, are very rare. The blood which issues from the mouth, comes ordinarily from the nasal passages or from the lungs. Nevertheless, when there exist fungi in the mouth, there may happen hemorrhages; but they are of a peculiar nature. Besides these fungi are only consecutive, as is seen in carcinoma of the tongue, in which the disease commences at first in the muscles.

The portion of the mucous membrane which covers the tongue is very subject to morbid sympathies. There exists between it and the stomach a peculiar relation which can not be compared but to that which takes place between the mammæ and the matrix, the testicle and the larynx. And indeed the most common causes of foulness of the tongue are gastric obstructions. If we examine the consistency of these sordes of the tongue, it is very tenacious, and although they are carefully scraped, they can not be entirely removed. It seems that this foulness of the tongue is produced by the subjacent glands, and not by the stomach, since no appearance of it is to be found in the œsophagus. There are, nevertheless, *cases* in which the state of the mouth seems to be an exception to this rule, and to be

influenced by the stomach; it is when the patient tastes a peculiar bitter taste which lasts as long as the sordes.

The effect of this foulness is loss of taste, that we must be on our guard not to mistake for a want of appetite, which proceeds from the stomach. The sordes of the tongue vary in their colour, which is sometimes white, at others gray or black. These phenomena are often accompanied by vomiting, which is only the effect of the gastric irritation. The tongue may be, in certain maladies, the seat of a contrary phenomenon, and become dry and rough, as we see in inflammatory fevers. This character is remarkable in adynamic fevers, so that writers have given it as the first symptom. Sometimes it happens only after two or three days: then the tongue dries and becomes black. There are, however, adynamic fevers which do not present this phenomenon. When there exists a blackish crust, it is not found only on the tongue, but also extends to the gums, and even to the lips. Sometimes it is of a considerable thickness, and at others it is very light. When the tongue becomes humid, it is a sign that it is about to disappear. What can be the cause of this black crust? It seems that it is furnished by the glands, as it is certain that the dryness proceeds only from the want of mucous. This phenomenon of adynamic fevers happens at all ages, but especially with old persons.

Sometimes in small-pox, pustules are observed on the tongue and on the internal parts of the cheeks; but it is not true that any are developed on the intestines, as authors have announced. There may also occur in the mouth *miliary eruptions*, in the fever of this name.

ARTICLE VIII.

Diseases of the Membrane of the Pharynx.

The pharynx is susceptible of idiopathic and symptomatic affections. Among the first, inflammations holds the first rank. They are known under the general name of *angina*. Two species may be distinguished, in dividing them according to the part of the membrane they affect. The first is *Angina Tonsillaris*.

We distinguish two species of *angina tonsillaris*; the one idiopathic, the other symptomatic; accompanied with eruptions of scarlatina. The first is very common; it occurs after exposure to cold air; then pain in the part is observed, heat, considerable tumour, and sometimes fever. In the mean while we see a circle, more or less red, and more or less defined, about the engorgement. The effect of this engorgement is to contract more or less the lower part of the pharynx. There is little projection forward, but much inward; the patient can not swallow without pain, because the tongue, pressing against the palate in deglutation, urges the amygdalæ forward and outward. The inflammation extends on the side of the cellular tissue, towards the jaw; hence, often the impossibility of opening the mouth. The swelling within is sometimes such, that it is only sensible to the sight. As the patient seldom dies of this malady, we know very little of the pathological condition of the parts. Ordinarily resolution takes place; and it is always accompanied with a more or less considerable mucous excretion; sometimes this excretion adheres to the surface of the glands; at other times it runs down into the mouth; then it presents a whitish aspect.

This *angina* may be complicated with the fever of scarlatina: there is at first soreness of the throat, accompanied with other symptoms; then the eruption appears and runs through its *periods*, as do all others. Sometimes also it

assumes a character of putridity, and then sometimes the amygdalæ become gangrenous.

The membrane of the pharynx, and especially that of the velum pendulum palati is very much exposed to ulcers produced by the venereal disease. These ulcers no way resemble those aphthæ of which we have spoken in the article on the mouth, and they have nothing in common with them, in aspect, cause, nor duration.

Another affection proper to this membrane, and the mouth generally, is blistering, in poisoning with nitric acid; there occurs a large crust which comes off in a very short time, leaving the parts bare, and presenting a very red colour.

ARTICLE IX.

Diseases of the Membrane of the Larynx and Bronchiæ.

The affections of this membrane are, as the others, idiopathic or symptomatic. The most common is angina, which presents a different character according to its seat at the base of the glottis or in the larynx.

The angina of the edges of the glottis was known to the ancient authors; they observed that it was mortal after two or three days. Some have called it *serous*, others *suffocative*. Indeed, in this affection, we find an infiltration or considerable engorgement, although whitish, of the cellular tissue, which surround the glottis, and which, as we see, produces a sudden suffocation. There is no other means by which to save the patient, but laryngotomy. Angina Laryngea, properly so called, and angina trachealis resemble each other very much. Both have some symptoms which are common: pain in the part, change of the voice, fever, painful deglutation and a sensation of burning. Often the affection is propagated in the nasal passages. There is at first, a dryness in the throat; soon after a mucous, somewhat

limpid, is secreted, then that which is thicker succeeds, and the malady ceases at the end of seven or eight days.

This affection may terminate in gangrene, of which no part of the mucous system is more susceptible. Rarely does it complicate itself with cutaneous eruptions.

Croup is also a malady peculiar to the membrane of the larynx. It differs from angina in its nature and progress. Commonly it attacks children. It is not generally epidemic. Its approach is announced by variable phenomena, as in all maladies. Sometimes this affection appears after a suppressed evacuation; soon after, pain of the larynx, difficulty in breathing, hoarse voice, aggravation of the symptoms, pungent heat, extreme agitation; the child puts his hand to the throat, the difficulty of breathing increases, the countenance becomes louring, soon after there is more or less drowsiness. The disease seldom terminates by resolution; ordinarily the sensation of suffocation goes on increasing, and finally the patient dies. It is astonishing how rapid the symptoms are, a circumstance which may be attributed to the tender age. Cadaverous autopsia shows flakes, as in phthisis pulmonalis. Besides the trachea and the bronchiæ are a little red and swollen. As to general changes the same phenomena take place, as in those persons who die with asphyxia.

The right portion of the heart is engorged, as well as the brain; the visage is red, and we almost always find in the larynx a false membrane, which extends more or less into the trachea. The thickness of this is variable; as to its nature, it has never been fully examined. It is not the inflammation, but its effects which cause death, for the thickening of the membrane shuts up the whole passage and excludes the air. It is practiced to excite vomiting, in order to produce a general irritation which may encourage coughing. We must observe on this occasion that we seldom cough after vomiting, and it would be better to excite the cough in another manner. However, laryngotomy is the

most efficacious means. Sometimes the inflammation of the membrane of the larynx becomes chronic. In other cases, this condition is produced by other causes than an acute inflammation, as by venereal disease. Whatever may be the cause, these are the characters of the disease: at first, painful sensation in the larynx; small but continual sputa, of a grayish colour, that the patient says he discharges from the larynx; habitual cough; little alteration in the voice; at last the symptoms augment; they are singularly influenced by cold and heat. As to the precise seat of the disease, it would be very difficult to determine; nevertheless it seems to reside in the mucuous membrane.

At other times, this affection terminates by laryngeal phthisis. Then the symptoms continually increase. The voice presents a peculiar phenomenon of extinction; there is a sensation of pain in the lower part of the the larynx, especially when it is elevated by the finger from the vertebral column; the voice is more altered; finally in the last periods, it is very low; the deglutition becomes very difficult, especially when the glottis is affected. Almost always this malady complicates itself with phthisis pulmonalis. Is it, as authors have said, because the pus falls into the bronchiæ? we know nothing about it; but the fact is quite common. Hence, extreme marasmus; towards the end, disturbed digestion, choking, and purulent expectoration. All these general phenomena are related to the consecutive affection of the lungs. The following is what post-mortem examination shows us. The larynx is observed to be diseased in several places, and most frequently at the height of the arytenoid cartilages. Its mucous membrane is ulcerated; we see some pus which seems to originate from a deeper situation. The affection may also be found behind the epiglottis, or towards the trachea; but it is almost never situated on the side of the thyroid cartilage. Writers have spoken of small osseous splinters which were expectorated by the patient. They can be only portions

of the arytenoid cartilages uncovered. It seems evident that it is through the mucous membrane that the disease begins; what seems to confirm it, is, that the voice remains for a long time uninterrupted, therefore, we may conclude that the cartilages are not as yet attacked.

The internal membrane of the bronchiæ may become the seat of diverse affections, less frequent however than those of the larynx.

Pulmonary catarrh is the most common, and that which writers have best observed. It is produced, as all the others are, by a sudden action of cold on the skin. The phenomena which characterize it, present some singular varieties, according to its seat. Indeed, it may extend into the trachea, or be continued into the lungs. The attack is manifested generally by a pain and a pricking sensation in the trachea, which produces a dry cough. Sometimes the pain extends to all the thorax; often it is confined to one side; nevertheless the patient can lie on either side.—Oppression augments, with continual cough, expectoration, difficult and always painful, in proportion to the increased sensibility of the bronchiæ; by degrees the symptoms diminish, pain subsides, expectoration becomes more copious and easy, the sputa are more viscous, finally the disease terminates in a complete resolution. As to the general phenomena which accompany it, they are to be met with in other diseases. Thus sometimes we observe at the same time a gastric obstruction, and all the symptoms which characterize it; then the cough is sometimes accompanied with vomiting. If the catarrh be at all violent, we remark a febrile commotion, which we call catarrhal fever. As to the condition of the secretions and excretions, it varies indefinitely.

At other times the acute catarrh of the lungs ends in a chronic one. Before we speak of the latter, we shall say a few words first of the *suffocative catarrh*. It is not of a nature different from common catarrh, but varies from it

only, in the great swelling of the internal membrane of the trachea or bronchiæ; hence its suffocative character, which causes the patient to die of asphyxia. This catarrh is ushered in by symptoms more violent than the preceding one, respiration very difficult, extensive and hurried dilatation of the thorax. Sometimes the air is expired with a hissing noise; at other times respiration is stertorous, and the patient can not speak. On the last days, we hear, in the trachea a peculiar noise produced by the action of the air on the swollen membrane. The symptoms go on always increasing, finally the patient dies, and presents all the phenomena of asphyxia. This catarrh is only mortal by its suffocative effects and not in its own nature.

Chronic catarrh of the lungs is sometimes produced, as we have already observed, by an acute phlegmasia. Often it is also the result of other causes. Cough then lasts more or less time; it is more or less violent; expectoration is not abundant; respiration is disturbed by any violent motion, as happens with all affections of the thorax. The patient may lie on either side, and the functions are executed as commonly. This kind of catarrh, with old men, ends only with life. Among persons of middle age it may produce phthisis, and patients treat it as a neglected cold. Sometimes it leads to hæmoptysis. Few subjects who have died of this malady have been examined; nevertheless observation has always shown the tracheal membrane to be materially thickened, downwards and towards the bronchiæ.

Hæmoptysis is another affection proper to the membrane of the bronchiæ. Indeed often patients die of these hemorrhages, without the lungs being engorged, whilst the bronchiæ are full of blood. Hæmoptysis may be produced by a rupture of the small vessels of the lungs, as after violent vociferation. Most frequently it happens by exhalation. It is almost always a sign of phthisis. It is difficult to determine whether the same cause pro-

duces these two diseases, or whether the former engenders the latter. Sometimes hæmoptysis is known by general characters; there is a sensation of tickling in the throat, and a saltish taste in the mouth very peculiar; next follows a very slight cough, with bloody expectoration, at times red, at others black, according as the blood has stopped flowing or not in the bronchiæ; sometimes this fluid is expectorated pure, and then expectoration is very easy; at other times there are sputa mixed and striated with blood, and which are detached with more difficulty.

As to the other diseases of the mucous membranes, they are seldom met with in the bronchiæ; we never see there any aphthæ; fungi are very rare, as well as cancer.

ARTICLE X.

Symptomatic Affections of the Pulmonary Mucous Membrane.

These affections are very common, and it is important not to confound them with the idiopathic. Pulmonary catarrhs are sometimes simply symptomatic, in pleurisy and peripneumonia, in which the mucous membrane is not directly affected. Nevertheless, there is an abundant mucous excretion in these two cases. The same is the case in gastric fever. Many essential fevers are also determined in this manner. Chronic diseases of other parts equally induce, in the mucous membranes of the lungs, sympathetic affections of the same nature; thus, in the diseases of the heart, we often see bloody expectorations. The same thing happens in phthisis.

ARTICLE XI.

Diseases of the Œsophagus.

The Œsophagus presents two maladies. It is seldom the seat of catarrhal affections or of hemorrhage. Sometimes aphthæ present themselves here, after poisoning with nitric acid. Sometimes it becomes corrugated, which is an effect of inflammation, or of the action of the venereal virus.

ARTICLE XII.

Diseases of the Mucous Membrane of the Stomach.

There are few mucous membranes oftener affected than that of the stomach. The continual state of excitation, in which the organ that it lines exists, is the cause of its frequent diseases; and by virtue of this physiological law, that, *organs the most active, are also the most subject to disease.*

The most common affection of the mucous membrane of the stomach is its catarrh, known under the vulgar name of *gastric obstruction*. (d'embarras gastrique.) This catarrh may be essential; but it is oftener symptomatic.

The symptoms in the beginning are loss of appetite, general lassitude; soon after a sensation of pain or of weight in the epigastric region, the sensation of which is by the patient referred to the ensiform cartilage. The tongue is almost always in a peculiar state. The gastric pain often causes nausea, and even vomiting. As to general symptoms, they consist especially in a peculiar head-ache extending over the orbits of the eyes. It seems that this pain has its seat in the brain. There is a sudden prostration of strength, an effect of the close sympathy which exists between the stomach and all the animal economy.

Different writers entertain dissimilar opinions as to the

seat of this malady. Some have asserted that it depended primitively upon an alteration of the liver, and they have drawn this conclusion because the patient passes sometimes a great quantity of bile, there is a bitter taste in the mouth, &c. All these symptoms do not prove that there is an affection of the liver; for, in a healthy state, the stomach contains more or less bile. The pain is never referred by the patient to the region of the liver. Moreover, when this last organ is diseased, we do not observe so great a number of sympathetic phenomena as in the case of which we speak.

This disease is only a true catarrh of the stomach, which, indeed, does not follow the ordinary progress of the others, but is of the same nature. There is an abundant secretion of mucous, which overloading the stomach, excites it to rise in order to relieve itself, which occurs by a law common to all the mucous surfaces. The fluids which are passed, are always mucous; but they may be mixed with some other substance, such as air; oftener bile. Authors who have only paid attention to the substances thrown up in vomiting, distinguish several kinds of bile. It is certain that it varies only in colour because it comes immediately from the liver, or because it flows from the gall bladder. The ancients recognised also atrabile or black bile, produced, without doubt, from the bile of the gall bladder; or by coagulated blood, that the patient throws up sometimes in cancer of the stomach. The gastric obstruction generally is terminated by spontaneous or excited vomiting. The appetite returns, and the patient gets well.

Very often gastric obstruction is only sympathetic. There is no organ so susceptible as the stomach of participating in the affections of other parts. We must pay particular attention to distinguish this obstruction from the diseased conditions of the stomach which are determined by a nervous affection, as in hysteria. Oftentimes, inflam-

mations of the organs are complicated with gastric obstruction, which is sometimes so characterized, that there are evidently two diseases. At other times, its symptoms are less intense.

We know very little of the chronic catarrhs of the stomach. We observe anorexia, and all the other symptoms of gastric obstruction, during a longer or shorter space of time. Is this state owing to a chronic catarrh of the stomach, or to another condition of the mucous membrane? we know nothing about it.

Vomiting of blood is another malady of the stomach, in which its internal surface does not change in its condition. It often happens after a compression or exterior contusion over the epigastric region. The most common cause in women, is the suppression of the menses.

One of the phenomena of the vomiting of blood is a saltish taste which remains in the mouth, analogous to that tasted by the patient in hæmoptysis. Another peculiar character is, that the mucous membrane of the stomach tolerates a greater quantity of blood than catarrhal mucous: Hence the reason why less effort is needful in vomiting.

We sometimes observe also *vomiting of black substances*, (or black vomit.) It is not known whence these substances come. The ancients called them *atrabile*. The moderns have abandoned this opinion, and believe that blood only is passed in melaena. Nevertheless, the former had perhaps better observed; for, generally, the affection succeeds to slow and sad passions. There is a pain in the region of the stomach and liver, and deep melancholy, as in all organic maladies. The matter passed presents very little analogy to blood, as well in its colour as in its consistence. Every thing induces us to believe, on the contrary, that it is bile. Vomiting of black matter, or black vomit, often returns. There is generally a concomitant affection of a neighbouring organ. The patient at last dies.

We then find in the stomach a certain quantity of blackish matter similar to that vomited. The mucous membrane is in its normal state. The adjacent vessels gorged with blood, but this depends upon the kind of death. As to the liver, it is almost always affected. The gall bladder is often full of blackish matter. The spleen also is often in a pathological condition.

Must *cancer of the stomach* be considered among the affections of the mucous membrane? It matters not, since we are ignorant in what manner it begins. What is certain, is that the serous tunic is never interested but towards the end. The mucous coat is not always so from the beginning. Sometimes, it may be regarded as the primitive seat of the affection. Cancer ordinarily succeeds to exterior contusions, violent emetics, sad passions, &c. Be this as it may, the symptoms that it presents differ according to the time in which it is examined. In the beginning, there is a general pain in the abdomen; anorexia and other symptoms of gastric obstruction, so that we know not which is the affection that is going to appear; vomiting is more or less frequent. At a more advanced epoch, it is more frequent, and accompanied by a painful sensation at the epigastric region, with or without appreciable tumour in that part. Sometimes, vomiting happens immediately after the patient has taken food; at other times it occurs only long after, which might deceive us and cause us to mistake it for another malady, if the other characters did not enable us to distinguish it. Blood is vomited at different intervals more or less remote, and this vomiting is often the forerunner of the affection. It is the more frequent as the pylorus is the more narrow. However, the disease is extremely easy to recognise.

As to the sympathetic disturbances of the other functions, at first there is troubled digestion. The pulse assumes different states, sometimes strong, sometimes feeble &c. The secretions and exhalations vary also singularly:

but the most constant sympathetic alteration is want of nutrition, the absorption of chyle not taking place. Besides, there is prostration of strength, and even symptoms of exhaustion, as in all the other organic maladies. At last the patient dies. Age influences very much the rapidity of the progress of the disease. Thus a young person perishes much sooner than an old one.

Post-mortem examination may present the disease in three different states, and having its seat in three diverse places. It may exist at the pyloric extremity, which is the most common; on the surface of the stomach, or at the cardiac extremity, which happens the least frequently of all.

In the beginning we see a projection, more or less prominent, about the pylorus. Sometimes the mucous membrane is already interested; but oftener it is untouched, and the disease has begun in the layer of the subjacent cellular tissue, so that it is impossible to determine in which of these tissues the disease uniformly originates. The pylorus is more or less corrugated. No gland as yet is diseased, nor any neighbouring organ affected. In the second stage the disease has made some progress. Then the adjacent glands begin to be engorged, between the liver and the stomach, from which results an irregular mass. There is more or less serosity effused in the peritoneum. In the third stage, the coats of the stomach are all invaded, and the glands begin to ulcerate. An ichorous matter is formed; often there is a rupture in the stomach, and the neighbouring organs are attacked. The patient may die in either of these three conditions. In the last, we remark a phenomenon entirely foreign to the other organic diseases; it is the friability of the bones. The last moments of the patient are often accompanied with an inflammatory state of the peritoneum, with general distension and effusion of ichorous matter in its cavity.

The other affections of the stomach are those which are

experienced in poisoning from nitric acid. They differ according to the more or less violent action of the caustic. When this action is moderate, it results only in the formation of a false membrane; in the second case, there is a real shrivelling (*ratcorriement*) of the stomach. When it has once acquired this latter condition, the organ can not resume its primitive sensibility, and it preserves this disposition till death, which soon comes on. We observe then frequent vomiting, and symptoms analogous to those of cancer.

ARTICLE XIII.

Diseases of the Mucous Membrane of the Intestines.

These diseases are very common. Some are chronic and others acute, but we have not yet been able to distinguish those belonging to the duodenum from those of the colon. We shall, then, consider them in a general manner.

The *catarrh of the intestines* is ranked as to its frequency, next in order to that of the stomach. It presents an astonishing variety in its intensity, which variety is a character common to all catarrhs. The lightest species is a slight diarrhœa, lasting only a few days, with moderate pain and no tenesmus: soon subsides without any inconvenience. We excite an artificial catarrh with purgatives. When this malady has more defined and intense symptoms, it is then distinguished by the appellation of *dysentery*.

OF DYSENTERY.

This disease presents itself under an infinity of forms, being susceptible of complication with a great number of diseases. One of its characters is its liability of becoming epidemic. Whatever may be its cause, the following are the symptoms: At first, griping pains; colic, more or less violent; weight, commotion in the large intestines; consti-

pation during the first days; tenesmus produced by the irritability of the intestines, and which is so much the more intense as these last are the more empty. This tenesmus indicates that the affection belongs exclusively to the mucous membrane, for it does not exist in those of the other tissues. There are often sensations of heat in the rectum. In the succeeding day, the symptoms augment; the griping is more violent. This sensation, sometimes difficult to express, has nevertheless, nothing in common with the inflammatory pain. Stools begin to pass the third or fourth day; more or less blood is passed, together with fæces and mucous, according to the individual constitution. However, we must not regard this character as an essential one in dysenteries. The stools and pains increase till the eighth or tenth day, varying according to circumstances. Pressure is very little painful; the abdomen is not tense as in serous inflammation, and the patient may lie on either side. Finally, the symptoms diminish by degrees; griping recurs at longer intervals, the fæces, are more abundant, and loaded with blood; and the malady terminates in ordinary diarrhæa. Such is the termination most favourable. As to concomitant symptoms; the mouth is bitter; there is fever, which varies singularly. Sometimes the disease takes the character of another affection, such as that of adynamia, ataxia, &c. We should never much regard the fever when it is simply concomitant.

Post-mortem examination has shown different alterations of the mucous membrane, such as redness more or less visible, swelling, sometimes small ulcers, which are common when the disease becomes chronic. A character peculiar to dysentery is, dejection by the anus of membranes of right sizes and of different degrees of thickness, which sometimes present the shape of the intestines: this is the cause why the ancients thought that we passed portions of intestines. It is incontestable that they are not portions of the intestines, but false membranes formed by the same

process as those that we find in the stomach after poisoning with nitric acid.

Acute dysentery does not always terminate as favourably as we have supposed. Sometimes it becomes chronic: then there is a remission of all the acute symptoms; but a looseness still continues, and lasts for a longer or shorter duration. At other times chronic looseness occurs spontaneously, with a moderate pain; which very often is entirely absent; but fæces are frequently passed; sometimes mucous, at others simply water; commonly a disturbance of the other functions; prostration of strength; dryness of the skin; urine scanty; marasmus. The patient at last dies. These affections are very common in hospitals.

Catarrh of the intestines is essential in all the cases of which we have spoken; but at other times it is purely sympathetic, as in ataxic and adynamic fevers, in which the disease runs through its periods as usual.

There are diseases which impart to the internal membrane of the intestines an aspect like that which it presents in chronic catarrhs: They are *prolapsus of the rectum*, and *volvulus*. Children are often exposed to these diseases. The internal membrane frequently becomes thickened and red; generally all the engorgements of the mucous membrane of the intestines present this phenomenon. The internal membrane may also be the seat of scirrhus tubercles; they are often found in the small intestines, after chronic dysenteries.

A patient, after having drunk much whilst in a great heat, was attacked with a violent colic, which disappeared, but returned eight days afterwards, with all the symptoms of dysentery; two days afterwards every thing disappeared, except the looseness. A month afterwards he presented himself at the *Hôtel Dieu*. The pains, which had left him, soon returned in a violent manner: he complained especially of pain in the right hypochondrium and about the region of the bladder. This disease was taken for a chronic

dysentery. The patient fell into an extreme marasmus. During the last two days a peritonitis happened which carried him off. On the examination of the body, the abdomen was found inflamed, an ichorous matter was effused, grayish spots appeared on the small intestines, and at small distances little scirrhus tubercles were seen, ulcerated on the side of the intestines, which formed a hard projection outward; moreover, several parts of the colon were contracted.

In certain cases of the same kind, there happen eruptions on the surface of the intestines.

The intestine may be also covered with aphthæ, which do not differ from those of the other mucous surfaces.

Cancer of the intestines is particularly manifested in the large intestines; it is more rare than that of the stomach. It seldom embraces all the portion of the intestine that it affects, this is the reason why there is no ring formed as at the pylorus. The morbid part loses all its extensibility. Whatever may be its seat, this cancer presents the same disposition as in the stomach. At first there is no alteration in the fibrous and serous membranes, but when the disease has made some progress, they all reciprocally affect each other; the veins become varicose, sometimes there happens a rupture of the intestines, and the aliments are emptied into the cavity of the peritonæum; there is a steady pain in the part, bloody stools, habitual diarrhœa, vomiting by antiperistaltic motion.

At the extremity of the rectum, cancers present some peculiarities: they are known under the name of scirrhi. Although often different tumours are confounded under this appellation, such as hardened hemorrhoids, the symptoms of cancer are easy to be distinguished. Often scirrhi are produced by the venereal virus. Whatever be the cause, they commence by a weight and violent tenesmus; dejections become more and more difficult; and they are bloody, which is produced by a slight lesion of the intes-

tines. These hemorrhages characterize cancers of all the mucous membranes. The difficulty of passing stools increases; the fæces are moulded to the shape of the tumour; finally it is almost impossible to pass them. Besides these symptoms, we may ascertain the existence of the disease by the touch, in carrying the finger into the rectum, and vagina.—These affections yield sometimes to suitable pressure; the patient often dies. Dissection shows, in the beginning of the disease, that the internal membrane is not affected, and that the subjacent tunics present then a considerable volume. As the disease advances, they unite and form a mass which ascends considerably. The intestinal parietes are thickened by the spreading of the disease, the surrounding cellular tissue and neighbouring organs, such as the bladder and the matrix, affect each other: there results from it a shapeless and ulcerated mass, in which every part is confounded.

Hemorrhage of the mucous membrane of the intestines is seldom *observed*, and when it occurs it is generally symptomatic, as in dysentery. Nevertheless, it sometimes results, with women, from suppression of the menses; in this case, the mucous membrane is untouched.

Dilatation of the intestines may depend upon the fæcal matter reascending, a condition very common in the rectum; with old men, produced by feebleness of this intestine. The continual absorption which is going on renders the dejections still harder.

Accumulation of air may also distend the intestines: it is then called *tympanites*. All writers have spoken of it without well understanding this disease. They have divided it into different species, the seat of which they sometimes placed in the surrounding cellular tissue of the intestines, sometimes in the cavity of the peritoneum, finally, sometimes in the intestines. The latter species only exist. In tympanites, we have two things to consider, first the cause which produces the gas, then that which keeps it in

the intestines. As to the first cause, it is produced by the aliments disengaging more or less air, which escapes commonly by the anus. The nature of these gases varies, but their base is sulphuretted hydrogen. The cause which withholds them, seems to be the atony of the muscular fibres which have been overdistended. What is very singular, is, that digestion may, for a certain time, be performed without this collection of gas escaping.

The contraction of the intestines, a contrary phenomenon to the preceding, is remarked under three circumstances: it is observed at the end of long abstinence; it may be the effect of a particular disease; but oftener it is produced by the unnatural state of the anus, in which case dejections are passed without being well elaborated. The intestines may assume a very small caliber, without ever being obliterated.

The second mucous membrane enters into the genital organs, whence it goes, in both sexes, to line the bladder and surrounding parts, besides the vagina and uterus in females. Its affections are the more frequent as we observe it nearer to its entrance.

ARTICLE XIV.

Diseases of the Mucous Membrane of the Glans Penis.

Catarrh is the most common affection of this membrane. It may be of two species. Often it is only an excitation of the glands subjacent to the corona, round the glans, produced either by the want of cleanliness, or by other cause; frequently this catarrh is accompanied by no inflammation. At other times it is the result of a venereal cause, which acts on the glans, as it does on the urethra. Then, it is more intense than in the first case, and runs through its stages as a gonorrhœa, which it entirely resembles.

Phimosis often happens from the engorgement of the

glans, which may be produced, as we know, by a simple exterior cause, or by a venereal taint. This disease, by the contraction of the prepuce, renders it impossible to uncover the glans. Sometimes it is a vice of conformation. Most frequently it depends upon inflammation of the mucous membrane of the prepuce, which in this manner loses its extensibility. Sometimes this is owing to some venereal callosity in the cellular tissue, where it is the result of a general leucophlegmatic habit.

Paraphimosis presents a condition entirely analogous to the preceding one, but is a converse effect. It consists in the difficulty, and even the impossibility of covering the glans with the prepuce, which makes a kind of ligature behind the corona. This disease may sometimes proceed from an unnatural contraction of the prepuce; sometimes it is owing to the swelling of the latter, or the glans being covered with chancres. It is sometimes immediately followed by an acute inflammation of the parts, and gangrene may be the consequence, if we should not have recourse to an operation.

Ulcers are also a disease proper to this membrane. They may or may not be venereal. The latter is often the result of too great friction, or whatsoever cause which produces on the glans a kind of excoriation entirely analogous to that of the skin when the epidermis is removed. As to venereal ulcers or chancres, they may present themselves under two different aspects. Some are coincident with a gonorrhœa and absorb the virus that it produces; in this case, they never present any callosities. Others are determined by a pre-existing venereal cause; they present callosities, hard edges, and an unhealthy and abundant suppuration.

ARTICLE XV.

Diseases of the Mucous Membrane of the Urethra.

Catarrh is the principal disease of this membrane. Every mucous discharge through the urethra is called gonorrhæa or blennorrhagia. Sometimes gonorrhæa is entirely free from venereal virus. As to the gonorrhæa, which has for its cause the latter, its symptoms are so well known, that we shall here only occupy ourselves with the anatomical inspection. The ancients believed that the semen only was discharged in a gonorrhæa, the seat of which was located in the testicles; others have supposed it to be in the prostate gland. Since, it has been observed that, in gonorrhæa, the canal only was painful, and especially in its anterior portion. Morgagni, who first occupied himself with these researches, placed the seat of the disease in the small follicles which are met with in the canal, and which are only the orifices of the excretory canals of the glands which pour out their fluids in these places. It is not in these follicles, but in the glands themselves that the gonorrhæa is located. According to recent observations, the anterior part of the canal has been seen inflamed. If we examine the phenomena of gonorrhæa, we find them in every respect similar to those of other kinds of catarrh. At first there is local pain, a moderate excretion of a serous fluid, soon after a more abundant and thicker discharge, which evidently proves that the mucous membrane only is affected. Often the disease is spontaneously cured, at other times it carries with it dangerous consequences. The discharge of gonorrhæa varies singularly, not only in relation to that produced by the catarrh of other membranes, but also in relation to the different periods of this affection. Sometimes the termination is in reality a chronic disease, and the discharge lasts during four or five months or even more; persons seldom die from

it, but often it is succeeded by a stricture of the urethra. At other times we are ignorant of the true cause of this latter effect. The ancients attributed it to some fungus fleshy growth in the urethra, an idea derived from the supposition that gonorrhœa depended upon the suppuration of small ulcers which exist in the canal. They have also said that it proceeded from cicatrices or bands; indeed we often meet with such; but it is not the most common case. Sometimes there are small tumours which are developed in the cellular tissue, and project into the canal, diminishing its diameter; very often also the urethra, contracts of its own accord, a phenomenon analogous to that of the stricture of the œsophagus and of the stomach. Accidents happen succeeding these strictures: thus we observe urinary fistulæ to follow, which open in different parts.

Gonorrhœa, is almost always an essential affection; there seldom happens any sympathy between the other membranes and the urethra, the cause of which is, that the genital parts almost never participate in the affections of the economy.

Hæmorrhages of the urethra are of rare occurrence. There are some which are accidental, but the essential are very uncommon. In this case, how shall we distinguish them from the discharge of blood with urine? It suffices to press the posterior extremity of the urethra, and if the blood runs in spite of this compression, then we conclude that it is only from the canal.

Cancers of the penis seldom begin in the membrane of the urethra. Whatever may be their primitive seat, this membrane is by degrees attacked. The neighbouring parts affect each other, and sometimes the disease is spread even to the pubes; then an operation becomes useless, and the patient dies in horrible torments. In this case, the prostate is engorged, and it bears the same relation to the cancer of the penis that the axillary glands bear to that of the

mammæ. In an advanced state of the disease, the parts are entirely changed in their nature, and brought back to the consistence that we observe in all cancers, a condition which must form an exception to the rules already laid down in the preliminaries of this work.

ARTICLE XVI.

Diseases of the Mucous Membrane of the Vagina.

Gonorrhæa, with females, has its seat in the vagina, and sometimes also at the orifice of the urethra: hence the pricking sensation they feel on the evacuation of urine. The catarrh, among them, may be produced by other causes besides venereal affections; it is then called *fluor albus* or *leucorrhæa*. Sometimes the disease is very light, and entirely analogous to a slight coryza. Often also it is more intense, but then it is almost always venereal. The affection does not extend to the matrix, and is arrested at the orifice of the vagina. This gonorrhæa with females is absolutely the same with that of men, with the exception of its termination, which often is in leucorrhæa. However, we ought to refer the chronic catarrhs of the vagina to two causes. First, fluor albus is occasioned by a local affection, as an immoderate coition, suppression of the menses, &c.; at other times it is only symptomatic. One would then be inclined to ascribe them to the general constitution of the person, whose countenance expresses weakness: There is pale complexion, fair hair, and extreme indifference to venereal pleasures, &c.

These affections, as well as gonorrhæa, depend only upon an augmented secretion of the mucous membrane; they are always without pain. The fluids which are produced by them vary in their nature and quality; sometimes they are so abundant that the patient is obliged to take some precautions, as at the time of menstrual discharges. Before the

age of puberty, leucorrhœa is of rare occurrence; nevertheless it is sometimes seen.

ARTICLE XVII.

Diseases of the Mucous Membrane of the Matrix.

Hæmorrhages of the mucous membrane of the matrix are very frequent; the most common is known under the name of *menstruation*. It is, as we know, a natural discharge, which begins with women at the age of puberty, and ends at that of forty or fifty years. The seat of this discharge is not in the vagina, but in the uterus: dissection and experience prove it. If we take the uterus of a woman, dead at the epoch of menstruation, and macerate it for twenty-four hours, on pressing it, blood issues, without, in any way, disorganizing the mucous membrane. This experiment has not the same result on the vagina. The menses do not flow by erosion, as it had been supposed, but by a simple exhalation, which varies in its quantity as well as in its duration. It is not uncommon with girls to see this discharge preceded by a slight whitish flux. Since the menses have their seat in the matrix, it is evident that they must indicate in their alterations the diverse affections of this organ: it is, indeed, what observation proves. Besides, all the passions of the soul, all the general modifications of the body, act on them in a marked manner. The vagina is not subject to these influences, and this circumstance establishes again the seat of the menses in the uterus. Moreover, uterine hæmorrhages are produced by a multitude of causes that we shall not examine at this time.

Cancer is another disease of the matrix which changes all its tissues, and sooner or later leads to the tomb. This affection is very common, especially in large cities. It may affect the body or the neck of the uterus, seldom if ever the vagina. It is not a disease of young persons. It is

observed commonly after the age of final menstruation; nevertheless, these are cancers which appear before this epoch. The causes of cancer of the uterus are very different: immoderate venereal pleasures, repercussion of the menses, itch, ring-worms, &c. Whatever may be the cause, it is ushered in by an irregularity in menstruation, which increases, stops, or changes in its periods: there are cases, nevertheless, in which they are not altered, this is particularly the case when the disease has its seat in the neck of the matrix. There is pain, more or less violent, in the region of the uterus; at first, it is only a weight, then a bearing-down sensation in the lombar region and at the upper part of the thighs. The belly is insensible to pressure. The general state of the system is very little altered; nevertheless there is sometimes anorexia and vomiting. If we examine women at this time, when the disease is in the neck, we shall find it hard and scirrhus. We must take care not to confound this condition with that presented by the os tinæ with women who have borne several children. Have scirrhusities their seat in the mucous membrane or elsewhere? it is difficult to determine. When the disease appears before the final cessation of menstruation, it seems to languish till that period; then it makes rapid progress—the symptoms of which we have spoken supervene,—and there is very violent pain in the region of the uterus, which sometimes tolerates pressure. The pain in the thighs extends even to the knees; it never spreads any further. The discharge is more or less considerable; at first it is blood, and sometimes it is a true flour albus. These fluids soon alter, and assume a peculiar character; they alternate, in their flux, with blood. The touch teaches, at this time, that the disease is considerably augmented. The patient dies before the disease has run through its stages. We find divers alterations in the cadaver; if the disease exist in the neck, there is a very considerable

swelling, and an enlarged ring (*bourrelet*) analagous to that found round the pylorus in similar cases. Generally, women do not die at this first period. It is oftener the middle period which proves fatal.

At this time, the pain is more intense, with very keen heat and slight inflammation of the vagina; urine is passed accompanied with pain; the discharge still continues, either red, or at other times an ichorous fluid, but always very fetid. The glands of the groin seldom become enlarged; but rather those of the mesentery, and especially those of the hypogastrium. The functions soon feel this local affection, digestion is imperfect; anorexia, diarrhæa, marasmus, small pulse, dry skin, no perspiration, infiltration in the feet, and even sometimes leucophlemasia. The skin of the face assumes a peculiar character; the complexion is leaden. Women generally die at this period. There is not as yet any general disorganization.

In the last stage, the symptoms are yet more intense: diarrhæa, marasmus, &c. On dissection, we find general disorganization of the body of the matrix, in which the vagina participates. Consequently, at its upper part, the tissue of the organ easily tears. The bladder and rectum adhere to the diseased parts. There often happens a crevice in these organs. All the glands of the mesentery are enlarged. Often to these cancers other affections are added; the engorgement of the glands is the most frequent; we often meet also with steatomatous tumours in the peritoneum. There are alterations which happen just before death; thus, we often find a chronic inflammation of the peritoneum, as we have seen in the article on cancer of the stomach. It is the property of these cancers to extend from tissue to tissue, whilst a multitude of other affections preserve their primitive seat.

We shall not speak here of *polypi* of the matrix, since they are not proper to the mucous membranes which line this organ.

Fungi, on the contrary, particularly belong to it. They must not be considered as cancers. Sometimes, they present themselves on the os tincæ; and at others in the bottom of the uterus. Women always experience more or less abundant discharges; the tumour enlarges, and soon fills up the cavity of the uterus. These fungi are analogous to the hypersarcosis of ulcers, but they are softer, and bleed more easily. The vessels which penetrate them are always capillary. The pain is not the same as in cancer. Often, parts of different sizes fall loose between the libiæ; the fungus is soon reproduced with rapidity, and the disease ends in marasmus.

There are other affections of the uterus on which much has been written, but which are rarely met with: such is dropsy. It can exist in two ways; a kind of bag may be formed between the mucous membrane and the other tunics, containing more or less serosity; at other times we find hydatids, small cysts, containing an albuminous fluid, and which appear spontaneously. It is believed that they are produced by worms;* we shall speak of them more particularly in the article on the liver.

The same is the case with tympanites of the matrix. This organ may be more or less distended by the air, which probably has found its way through the vagina; for, it is difficult believing it to be generated there.

ARTICLE XVIII.

Diseases of the Mucous Membrane of the Bladder.

Catarrh may affect this membrane. It may be slight, and be only occasioned by feeble irritation, such as that produced by the presence of a sound or bougie; it disappears as soon as the cause ceases to act.

* Dr. Baillie is rather inclined to believe that they are animalcules, like those found in the liver and brain of sheep. TRANS.

Does there exist in the bladder an acute catarrh which corresponds to that of the thorax? This question is not as yet settled, although analogy seems to indicate the affirmative. We have not yet sufficiently exact observations either on the progress or symptoms of this malady. This is not the case with respect to chronic catarrhs, which supervene ordinarily in old men; then, there is discharged together with urine an abundant mucous, which is deposited in the bottom of the vessel. These catarrhal affections last more or less time, and commonly with old people they only terminate with life. The mucous membrane is found thicker, but not disorganized.

Ulcers of the bladder are equally accompanied with mucous excretion; but there is at the same time some particular phenomena: such as pain, difficulty in passing urine, often evacuation of blood. On dissection, we find all the surface of the bladder hard, thick, strewed with blackish spots, and the disease is always confined to the mucous membranes.

The bladder is sometimes the seat of other, but not important affections; such as the swelling of the neck of the bladder, which hinders the passage of urine, and soon disappears.

CHAPTER VII.

Diseases of the Cellular Tissue.

THE cellular tissue, as we know, fills up every interstice between the organs, which it envelops, and of which it penetrates the substance. It is particularly in the interstices of parts that we consider it, under the relation of the diseases that it may experience. These diseases may be

classified under three heads: some, idiopathic, arise there spontaneously, and run through all their periods, as phlegmon; some others depend only upon the continuity of this tissue with some primitively diseased structure, as cancer; finally others, are purely symptomatic, as leucophlegmasia, which is produced by an organic derangement. This distinction is real: and may be recognised even at the bed side of the patient.

We shall first treat of the *essential* diseases.

Phlegmon, which is the inflammation proper to this tissue, presents itself under a different aspect from the inflammation of all other parts. Its causes may be internal or external. When they are very feeble, the characters of its attack are not marked. When it is more intense, there happens a chill, heat and pain in the part; in two or three days it assumes a peculiar kind of pulsation; sometimes we do not recognise this last by the touch, and sometimes it is induced by the greater action of the subjacent arteries, at the same time there supervenes a swelling the more marked as the crisis of the malady approaches. This tumefaction must be considered under two relations: at its middle part it is red, and this is induced by inflammation properly so called; at the circumference, the engorgement is much less inflammatory; it is rather indurated. The tumour goes on progressively increasing. Let it be observed that there is no tissue susceptible of swelling, if we except the cellular tissue. Other characters distinguish its inflammation, such as pulsation and heat. Redness does not disappear under the finger, as in erysipelatous inflammation. As to general symptoms they are common to all inflammations, and are signs of secondary consideration. There are often some gastric symptoms and a fever more or less violent. As to what regards exhalations and secretions, they vary singularly, as well as the strength. The duration of these phenomena is extremely uncertain; it depends, as we know, upon the condition of the patient, his tempera-

ment, and the degree of intensity of the disease; nevertheless it seldom exceeds the seventh or eighth day. There occur few autopsic examinations of phlegmon in this first condition, in which we find a considerable diminution of the tumour; the swelling at first disappears, and the phlegmon, properly so called, sinks the more in proportion as it was more acute; sometimes it assumes a livid colour; few blood vessels are observed, and the blood is evidently extravasated in the cellular tissue. After the sixth day, or even later, the phlegmon terminates; sometimes it is by resolution, oftener by suppuration, the character which distinguishes it from the other phlegmasiæ. Resolution is indicated by the cessation of symptoms, of pain, &c.; the skin becomes yellow, especially at the circumference, and by degrees it resumes its natural type, but commonly the epidermis exfoliates.

Suppuration is announced by very peculiar phenomena; the pain changes in its nature, and from poignant it becomes tensive; the tumour presents in the centre a projection more red, the skin becomes thinner, and a fluctuation is felt. It opens commonly outwards if we permit nature to take its own course, and pus is inclined to seek its way to the exterior rather than into the cavities. When we examine an abscess, we see this appear under two different conditions. The greatest number of exterior abscesses have their pus in a mass, and enclosed in one centre intersected by bridges. As to those which are contained in the interstices of deep seated muscles, pus is there commonly infiltrated in the cells of the surrounding cellular tissue.

How is pus produced? This production in the cellular tissue is a character which distinguishes it essentially from that of the serous or mucous membranes, which is only effected by the augmentation of the exhaled fluids; on the contrary, pus, properly so called, differs very much from the fluid which moistens the cells of the cellular tissue. It is evidently formed by exhalation and not by rupture, 23

has been supposed; and this we prove by the analogy of the different membranes. Besides, after obstinate suppuration, we do not remark any erosion in the abscess which has discharged it. But how comes it to pass that the minute vessels which brought the blood for the nutrition of the part, now discharge a purulent fluid?—We know nothing about it; all we know is, that there exists manifestly in them a change of sensibility.

Pus is a viscous, whitish fluid, slightly adhesive, inodorous, when it is of a healthy nature, but may vary infinitely.

Chronic inflammation is another mode of termination of phlegmon. It often succeeds abscesses; resolution can not be entirely induced, the parts harden, cicatrization can not be formed, and there remains a fistula.

The last termination of phlegmon is gangrene. It may depend upon the intensity of the inflammation, but it is often occasioned also by a deleterious cause which mingles with the primitive disease; it is then called *carbuncle*. We distinguish two kinds; the symptomatic, (of which we shall not speak here) and the idiopathic. The essential carbuncle is an extended tumour, seated in the subcutaneous cellular tissue. Its colour is a livid brown. This tumour, harder than the usual phlegmon, is often accompanied with a lymphatic thickening (*empâtement*.) Soon after there rise small phlyctænæ, on its surface; they discharge serosity, and the skin is observed to be gangrenous; the eschar is formed, a reddish circle circumscribes it, finally it falls off, the sanies runs for some time, and the ulcer at last assumes a better aspect. The pain in this carbuncle presents a peculiar character of heat. The strength is always prostrated; besides the disease undergoes singular modifications, according to the prevailing epidemic.

The cellular tissue, in diverse parts of the body, presents differences in its affections according to the parts which may be the subject of our examination.

The subcutaneous is more exposed to diseases, being the nearest to the external surface. All causes proceeding from without act on it. That of the head is oftener affected on the face than on the cranium. Whatever may be the seat, the subcutaneous phlegmon always presents analagous and distinctive characters; at first, it is always circumscribed; the skin is red, the only membrane which is thus inflamed conjointly; which is evidently induced by its organization: its internal surface is composed of areolæ, which embrace a part of the cellular tissue; this last is infiltrated in leucophlegmasia, and is detached after maceration. From this association of the skin, there results an erysipelatous phlegmon. When resolution occurs, it also takes place in this part; suppuration disorganizes and pierces it: the same thing happens in gangrene.

Furuncle is a species of inflammation which belongs as much to the cellular tissue as to the skin; its causes are sometimes exterior, as uncleanliness; sometimes interior, and then it is induced by a peculiar disposition.

In the first case, the furuncle is generally single and more or less voluminous; in the second case, there exist always a great many. Every part of the body is susceptible of being attacked by it, if we except the cranium, the soles of the feet and the palm of the hands. It begins by a redness less lively than that of the phlegmon: the tumour advances, and is less rapid in its progress than that of ordinary inflammation. Within the space of eight or ten days, the summit becoming excoriated, there comes out from it a cellular flake called (*bourbillon*;) then the tumour softens and advances toward a cure. The pus is not healthy, and the surrounding parts are more or less swollen. There is no danger of any fatal consequences; sometimes there is a slight fever; but, if there is a predisposition, it may happen that these accidents may be more intense. Anatomical inspection proves that the seat of the disease is in the cellular tissue and in the skin, that the

first is destroyed in the part for some distance, and the skin pierced like a sieve. There is a total difference between this inflammation and the phlegmon: here pus is really infiltrated, and there is no remainder of the disease on the skin after the cure, whilst, in the phlegmon, there always remains a cicatrization.

There exists cellular tissue under the mucous membranes, as well as under the skin; but it is less abundant and closer; also it is seldom the seat of phlegmons, which we only observe near the rectum. Besides, this tissue is never fatty nor infiltrated.

As to the subserous tissue, it is looser and more voluminous, as about the peritoneum and the pleura; this is the reason why it is often the seat of abscesses; but the serous membranes suffer very differently from the skin, and instead of being corroded, they become hard by the contact of the pus: by this means they prevent it from being discharged into their cavities, an accident of very rare occurrence. Nevertheless we must remark that these serous membranes have a great analogy to the cellular tissue; which is here, however, differently organized.

The sub-vascular tissue never becomes inflamed; its organization is different from that which it possesses in other parts; it also never contains any serosity nor fat, and even if it happened that the abscess should penetrate into it, the external tunic of the vessels would thicken, as is the case with the serous membranes.

Often also phlegmon has its seat in the interstices between the organs, and the pus which is there formed is called *fusées*. All the intervals between the organs are not equally subject to it; it may supervene on the face, neck, abdomen, and the extremities, but it is especially before the vertebral column that we observe it. These abscesses, either indolent or acute, dissolve by degrees, and reappear in another part, more or less remote: they are called *abscesses by congestion*.

The cellular tissue acts the most important part in wounds; we shall speak of it only relatively to the organic phenomena which are occasioned in it. Considered in this light, wounds are divided into those which heal by the first intention, and those which are cured by suppuration. In the first case, there is inflammation of the cellular tissue of the lips of the wound, brought in contact, whence result adhesion and continuity of the parts, which before were divided. We can not explain this phenomenon; all we know is, that it is very analogous to the adhesions that we observe to succeed the inflammations of the serous membranes. The skin retains for a long time the mark which is indicated by a linear cicatrix.

The wound which does not heal by the first intention, requires more or less time to run through its stages, and it has then, all the appearance of there being a waste of substance. Nevertheless, whatever may be the mode of division, there happens a series of phenomena before the cicatrix is closed: there is at first a swelling of the edges, and after some time the bottom of the wound becomes red. This redness goes on increasing. After the bloody discharge stops, then succeeds a serous pus, which is soon substituted by another of a more healthy nature. It is the good or bad quality of this humour to which is owing the healthy or disagreeable aspect of the ulcer. The progress of the cicatrix is also influenced by the remedies employed. By degrees the edges are depressed and draw near the centre; we see granulations grow out from the bottom, soon unite, and form a kind of fleshy membrane covering the denuded cellular tissue. These granulations are evidently of a cellular nature, for their growth is easier in proportion as there exists more cellular tissue; moreover they are always of the same nature in whatsoever place we observe them.

Several authors have believed that they were only the expansion of the vascular tissue; but they are not in the

least formed by vessels. They are covered by a membrane, and in the interstices of the cellular tissue, are filled with a whitish substance, the nature of which is yet unknown. As we have already observed, the sooner the granulations appear the more speedily is the *cicatrix* formed. A pellicle which arises from the edges extends over the surface of these granulations, and covers all the wound. This substance is not the true cicatrix; it only serves to protect its formation, so that, when this operation of nature is accomplished, it falls off in scales. Then the substance which is to occupy the place of the skin appears; it is at first red and very sensitive; it soon whitens, and often becomes harder than the skin itself. Its thickness is in an inverse ratio to its extent of surface, and dependent on the laxity of the parts where it is observed. On the scrotum, it is much thicker than on the cranium. This cicatrix has nothing in common with the skin; its nature is totally different. It is nothing else than thickened and organized cellular tissue. Generally it adheres to the subjacent parts. It is very sensitive to the variations of the atmosphere, which renders it more or less painful.

Ulcers affect particularly the cellular tissue, whatever may be the organs they interest. They often succeed wounds. If, after a wound has run through its ordinary stages, suppuration is kept up by any cause whatsoever, this wound assumes then the appellation of *ulcer*. Exterior ulcers may affect diverse parts. Some are purely cutaneous, such as the scabby ulcer (*ulcère dartreux*), or those which supervene after a blister. At other times they have their seat immediately in the cellular tissue, such are those which succeed the phlegmon, furuncle, or carbuncle. All these ulcers are the consequence of the chronic phlegmasia of the cellular tissue. There are others which interest the muscles, aponeuroses, and of which we do not yet fully understand the alterations in these diseases. The vitality of each organ exerts an important influence

on the condition of these ulcers. Very often, these latter interest several tissues at the same time; but the cellular tissue always acts the most essential part, since it is the most abundant, and is that which produces pus.

In simple ulcers, in general, the edges of the skin are a little swollen; all the cellular tissue is denuded and then covered with granulations; suppuration, more or less copious, is a true exhalation. As to the subjacent parts, they are commonly untouched.

Ulcers may present several complications. They are often covered with a great quantity of fungous excrescences; which are always accompanied with paleness, indicating the bad condition of the wound.

Callosities are also a very frequent complication; all the organs are susceptible of it. At first, it is only a more or less intense engorgement, but which continually increases, so that, at last, the cellular tissue assumes a steatomatous consistence. Besides, these callosities are in their nature entirely unknown. They may assume very different characters. In a simple ulcer, they commonly make no progress; but when it is malignant, they enlarge very much. The skin often participates in this complication.

The fistulous condition is a complication of ulcers, which only consists in a peculiar mode of conformation, which requires for them a peculiar treatment. *Fistulæ* are generally kept up by a discharge of pus or any other fluid whatever. In certain cases they exist without any known cause. Whatsoever be their source, they have nothing uniform in their conformation. The fistulous canal is ordinarily a little inflamed and callous.

Varix is also a complication of ulcers; it is extremely frequent with individuals of a weak and plethoric habit; there supervenes an œdematous swelling, which disappears by the use of a bandage.

Leucophlegmasia is another affection of the cellular tissue, almost always symptomatic. Nevertheless there are

some which are essential, that are always local. Thus do we see sometimes an œdema of the eyelids more or less considerable. It is especially in the parts in which the cellular tissue is most loose, and in those which are the lowest, that dropsy occurs; such are the scrotum and the inferior extremities. However, in this disease, the tissue is not in the least altered, and its cells are only dilated. The fluid effused is transparent, and is easily coagulated by the action of acids; in a word, it is the same as that which we find every where exhaled.

Fat may be abundant or may be wanting. In the first case, there is an appearance of plumpness. When this *embonpoint* is not very considerable, far from constituting a disease, it is on the contrary a sign of health. Sometimes the fat accumulates in so great a quantity that, indeed, it produces a true pathological condition; but still there exists this difference between this latter state and anasarca, that excessive fatness does not kill the patient; but denotes only feebleness, little activity when in motion, and sometimes exhaustion, as we observe in eunuchs. This *embonpoint* is developed when favoured by certain circumstances; it is often observed to occur from the age of forty to fifty, and also, generally in those persons who lead a sedentary life, and who are fond of good living. The abdomen is particularly the seat of this accumulation of fat, which occurs sometimes in its cavity, and sometimes on its parietes. This condition has never been observed to coincide with an organic affection. The other parts of the body, besides the abdomen, may also become loaded with fat, such as the neck, throat, and extremities.

Sometimes fat disappears from the economy. A moderate leanness never constitutes a morbid condition. Nevertheless, if it coincide with a state of feebleness, then it is ordinarily the symptom of an organic disorder, especially in the lungs. This leanness may also supervene upon sad passions; but does it then depend on an immediate affection

of the cellular tissue? It is more probable that it succeeds some organic alteration. Violent exercise, change of air, want of nourishment, are so many causes which produce leanness. Sometimes leucophlegmasia is added to the emaciation.

Encysted tumours have also their seat in the cellular tissue. Two kinds are distinguished; wens and cysts properly so called. There are two species of wens, some are meliceritious and some atheromatous. Wens may appear in every part of the body. Some are observed on the neck, cranium, back, and face. They are always rooted in the subcutaneous cellular tissue, and generally the skin which covers them is untouched. Several may exist in the same part; they may be either insulated or united; they vary in their form and volume. Dissection shows us that they are a kind of bag without any opening, which contains a fluid; the external surface of this bag is united to the contiguous cellular tissue; the internal smooth and polished, corresponds to the contained fluid. These bags vary in thickness, so that the cysts of which the fluid is the least liquid, are those of which the parietes are the least thick. Sometimes there are bands within these bags, and at others there are none. As to the fluid, it varies singularly; sometimes it resembles honey, and at others curd. It seems that these varieties are purely accidental. Its colour is no less variable. Moreover, whatever may be its colour and consistence, albumine seems to be the base of it.

Physiologists have tried to explain the formation of cysts. It seems that the membrane of these bags has a very great analogy with that of a cicatrix, that it is produced by the formation of granulations, and not by the flattening of the cells, as it was supposed by the ancients, which would be contrary to all the laws of the economy.

There are also some cysts, properly so called, in which is found a serosity almost limpid. These tumours are entirely analogous to the preceding. Some are found in the

abdomen and in other parts; but it is especially along the spermatic cord that they are to be met with: the fluid which they contain is seldom altered.

The cysts of the *ovary* do not belong in reality to the cellular tissue; but we shall speak of them here because they have a great analogy to those of this tissue.

A great many subjects present some remains of this dropsy, which depends almost always on some alteration in menstruation, either if it appears at the final cessation of menstruation or before this epoch. Whatever may be the cause, this disease can not be recognised in the beginning. The patient experiences a weight in the part, but it is not a well defined pain. The disease carries along with it very few general alterations; when it begins to be well characterized, there are some signs which enable us to detect it, for example the size of the abdomen. But with this character alone, we may confound the dropsy of the ovary with ascites. In order to distinguish these two diseases, we must have recourse to the symptoms which have preceded. In ascites, there will have been a preceding malady; in dropsy of the ovary, there will have been only a derangement in the menses. In this latter case, the tumour is from the beginning circumscribed; in the former the whole abdomen is tumefied at the same time.

In the dropsy of the ovary, there is no infiltration of the lower extremities; the disease is very slow in its progress, for, some have been observed to have existed during eight or ten years. But from this enormous distension results at last a derangement of the functions; digestion is impaired, and the pulse is feeble, as in all dropsies. Urine is, of all the secretions, that which presents the greatest varieties; sometimes it is abundant, at others it is suppressed, and according to these two conditions, dropsy increases or diminishes. The skin is parched, pulmonary exhalation almost absent, and leanness extreme. Dissection shows the ovary to be enormously dilated; in its internal surface

there is a kind of false membrane formed. Sometimes its cavity is divided into two. The fluid which it contains is always altered; it presents different colours and different degrees of density.

Steatoma is also a tumour which is developed in the cellular tissue, and which is surrounded by a membrane, being only less sensitive than that which forms cysts. This membrane sends off into the interior, prolongations which constitute the cells and contain the fluid. This latter is denser and more solid than in meliceritious tumours; it has a yellowish tint, and contains a great quantity of albumine. This kind of tumour may supervene in all parts of the body, but especially under the skin. They are recognised by a very peculiar hardness; if they are incised, nothing is discharged. They are often observed on the head, neck, and trunk; we find them also in the cavities, that of the cranium excepted, where the want of cellular tissue renders the existence of those diseases of which it is the seat, impossible. The same is not the case with the thorax; since it presents much more cellular tissue, and consequently some steatomæ are here developed; these tumours cause then peculiar consequences, according to the organ with which they are in contact: it is impossible to detect their existence, and we can only suspect them. In the abdomen, they often supervene in the mesentery, and are the cause of violent abdominal pains; at last, they form such a projection that they can be perceived by the touch. At first there is no disturbance in the digestion, but at last, marasmus supervenes and carries off the patient. Steatomæ may also be found in the pelvis. Some are also seen on the members. These tumours are nearly similar wherever they are observed; they nevertheless vary in size. Those we find under the skin may be very small; but, in the cavities they acquire an enormous size: there are then no pathological signs to detect them, if we except their hardness to the

touch, and the alteration of the organs that they encumber by their volume.

Lipoma (fatty tumour) is nearly similar to the preceding one, which always occurs in the subcutaneous cellular tissue. This tumour is more or less voluminous, and often presents a pedicle. It is formed by a concretion of fat, sometimes altered in its nature.

ARTICLE I.

Of Affections from Contiguity of the Cellular Tissue.

There is no system which feels more promptly the influence of the diseased organs than the cellular tissue. This sympathy seems to depend upon its mode of disposition in the general structure of the organs of which it is the basis. Thus when an organ is affected, the cellular tissue which composes it soon becomes so too, and, according to the law already established, that, *diseases may be propagated in tissues of a similar nature*, the neighbouring cellular tissue is soon equally affected. Thus in phlegmon, all the surrounding parts experience a more or less considerable swelling; in erysipelas, the same phenomenon takes place. In fractures, contusions, &c., we observe a swelling of the surrounding parts, which, without doubt, differs from inflammation; it is not an œdema, for, in pressing with the finger, the impression does not last any time; besides there is a peculiar sensibility which does not exist in this last disease. It is not an emphysema since crepitation is not felt, and that, besides, emphysema only supervenes after the rupture of an organ which contains air. It seems that this phenomenon is owing only to a peculiar excitation of the cellular tissue.

It is especially the subcutaneous cellular tissue which is engorged in phlegmon, erysipelas, and gout. The same is the case with that which surrounds the serous membranes;

thus in enteritis, the distension of the abdomen is owing to the swelling of its cellular tissue. No appreciable swelling is observed to accompany the inflammation of the mucous membranes, which is owing, without doubt, to the density of the cellular tissue which is in contact with them.

This tendency of the cellular tissue to participate and receive morbid impressions, may cause the translation of an affection from one organ to another. Thus, the inflammation of the pleura may be communicated to the lungs, and, *whenever an organ participates in the affection of neighbouring structures, it is always through the cellular tissue that it receives its impressions.* After death, the swelling which accompanied the inflammation disappears almost entirely. When an affection is chronic, the cellular tissue is more or less affected, as is observed in cancers and old ulcers.

Another phenomenon from contiguity of the cellular tissue, is leucophlegmasia, which sometimes is symptomatic, but which often is affected also by the contiguity of the diseased organs. Thus we sometimes see local infiltrations about old ulcers. However, the malady is the same as in sympathetic infiltration; the cause only differs.

Emphysema may be numbered among its maladies; it never occurs but in the parts immediately surrounding the thorax, and in some cases of gangrene. It is ascribed to three circumstances: first, to violent movements of the chest and lungs in uttering vehement cries, because if then it happens that one of the cells of the bronchiæ is ruptured, and that the air which escapes from it, follows the course of the axillary vessels, it extends to the neck or on the lateral parts of the thorax; 2d, to fractures of the ribs; and, 3d, to deep incised wounds of the chest. When emphysema is only local, it is soon dispersed by the use of resolvent compresses; but, when it is general, death is inevitable.

ARTICLE II.

Of the Sympathetic Affections of the Cellular Tissue.

Œdema is one of the most frequent affections of the cellular tissue in acute fevers, and even in intermittent fevers whenever they are a little protracted. Then a slight œdema is observed in the legs, more considerable towards the evening, and disappearing during the night. In organic diseases, this phenomenon is very common. The affections of the liver, of the spleen, and particularly of the lungs, cause a leucophlegmasia which ordinarily begins by an infiltration of the legs, and which is often complicated with dropsies of the serous membranes.

Emaciation is also a symptomatic phenomenon of the cellular tissue, for, it only supervenes on the occasion of some primitive affection. It is not the consequence of certain organic maladies, such as those of the heart, and brain; but those of the lungs and several others always produce it.

Hemorrhages of the cellular tissue are also to be ranked in the same class. There are some, indeed, which are accidental, such as those which are consecutive to contusions; then they are induced by a rupture, and the blood effused is soon absorbed. There are some which are spontaneous; these rarely occur but in scurvy, a disease which affects the whole economy in general. The external examination of scorbutic persons presents spots of two kinds: sometimes they are very large and occupy a part of the extremities; at others they are merely petechiæ. We ordinarily find these two species isolated; the thighs, the legs, the nates and the arms are the seat of them, but seldom the trunk, and never the face. Whatever be the cause of this phenomenon, on dissection we find spots (*plaques*) depending upon an extravasation of blood in the cellular tissue. As to petechiæ, they are perceived at the points

where the hairs issue; often bloody infiltration happens in the very muscles themselves, and then it is not perceived on the exterior. It is very probable that these scorbutic hemorrhages are induced by exhalation.

Finally, the cellular tissue, in many diseases, assumes a peculiar flaccidity and laxity. This is what we observe in old age; we observe it also in adults, after acute diseases, in which the soft parts are flabby, and do not resume their tone but after a perfect recovery. This flaccidity has a very peculiar effect on the face; it is that which confounds the expression of the countenance.

CHAPTER VIII.

Pulmonary Diseases.

THE lungs have not as yet been considered by us as a simple tissue, because they are an organ; nevertheless, in pathology, we must regard them as such, although, there does not exist in any part of the body any thing analogous to them. They differ especially from other organs in their diseases. Their inflammation, for example, has nothing in common with that of others: the progress of it is more rapid; the pus has a very peculiar nature and odour. Tubercles exclusively belong to this organ,* as well as calculous concretions. The diseases of the lungs are extremely common, which results without doubt from the close relations of this organ with exterior bodies. We shall first speak of its essential affections, and then of its sympathies.

* The similar small tumours which occur in the liver, spleen, peritoneum, and even in the heart, are by Laennec and others denominated *tubercles*. TRANS.

ARTICLE I.

Inflammation of the Lungs.

Peripneumonia is the principal of the affections of the lungs. This inflammation is more frequent than that of the pleura, it commonly depends upon a sudden change from heat to cold. Whatever may be its cause, the following are its phenomena: its attack begins with chills, fever, pain in the side, more or less intense. Sometimes it is ushered in with heat; in certain cases, the fever precedes for two or three days; the pain in the side augments; in three or four days it has reached its highest degree. When in that condition, the patient experiences a violent pain in the chest, sometimes in both sides, and at others in one side only, accordingly as both lungs or one only is affected. Often he refers this pain to no particular part. The sensation is not as in pleurisy lancinating, but an oppression which exhausts very much; sometimes, also, the pain is local. Respiration is oppressed, but otherwise than in pleurisy. Short inspirations are not painful. To this suffocation is added a cough more or less violent and frequent: on the first day it is dry; but after three or four days the expectoration begins; sometimes the sputa are white, sometimes they are bloody; sometimes they are of a rusty yellow, this colour does not indicate gastric disturbance. Expectoration varies also according to the time at which it is examined.

During the intensity of pleurisy, the patient can only lie on the side which is not diseased; in peripneumonia, the situation makes no difference; exterior pressure is not painful. As to percussion, its results vary according to the state of the malady; in the beginning the sound is clear, towards the end it is dull. When the two diseases unite, there happen common phenomena, which it is of very

little consequence for us to discriminate for the sake of the treatment, since it is nearly always the same.

As to the general phenomena, the condition of the digestive organs varies singularly. Commonly there is gastric disturbance, some diarrhæa, at other times constipation; there is always a concomitant fever; the pulse has nothing determinate. The same thing is true as to the state of the secretions and exhalations. The urine at the beginning is generally lateritious. Nutrition is not altered, since the disease is very acute. The cerebral functions are ordinarily unimpaired; nevertheless, there is some delirium. The strength is generally diminished; sometimes debility increases, and then the disease assumes a character of adynamia, which is often more marked than the primitive disease.

The most common termination of peripneumonia is resolution. The disease lasts till from the eighth to the tenth day; then gastric disturbance ceases with the cough, and the sputa resume their natural state. This termination is not ordinarily marked by any crisis, such as a sweat or a hemorrhage; only the blood disappears from the sputa, which are often very abundant for some days.

Another termination is suppuration. All writers have spoken of it, and have designated it under the name of *vomica*. One would be induced to think, to hear them speak, that it is very common; but it is very seldom observed. Indeed, we remark, sometimes, purulent specks in the lungs, but too inconsiderable to be regarded as abscesses. There is another mode of suppuration more proper to the lungs, it is the infiltration of their tissue by a serous and whitish substance which gives to it a fleshy aspect resembling the substance of the liver, and indeed they are then said to be *hepatized* (*hepatisé.*) The following signs are those which would induce us to suspect its existence during life, towards the ninth or tenth day; there is no remission; the sputa are of the same nature; breathing is every day

more difficult, especially when the patient has drunk something; he finds some difficulty in lying on the diseased side: percussion becomes more dull; prostration increases; there is almost always a florid redness on the cheeks, which is ordinarily a positive sign of affections of the lungs. The symptoms continue to increase, and sometimes the patient dies suddenly. This termination is frequent in peripneumonia, complicated with adynamia or ataxia; in the bilious and simple form it is something less frequent. It is remarkable that in the complication of adynamia, the patient never dies from the latter, but always from the affection of the lungs, and commonly after the four or five first days of the complication. However, in these terminations the lungs are found thickened, weighing three or four times more than when in a healthy state. There is no organ susceptible of acquiring an augmentation of weight so quickly. This facility of being engorged, is to be ascribed to the extensibility of the lungs, as it is also observed in cases of asphyxia, with this difference, that in the latter, this organ does not sink in water, whilst, when converted into a substance like liver, (*carnifié*,) it may even carry to the bottom, along with itself, light substances. In this case, one would be induced to say that it is not the fluid which is increased, but the solid parts: nevertheless we may convince ourselves of the contrary by macerating a part of the *hepatized* lung. If, some time afterwards, it is compressed, it resumes its normal state, by discharging the pus that it contained. This disposition sometimes exists in one of the lungs, and at others in both, lastly in one portion only, and when this occurs it is in the superior part. Thus engorged, the lungs lose their extensibility; they tear with great facility, and have no elasticity. With regard to their blood vessels, they assume the appearance of those of the liver; we find their orifices wide open when cut transversely. As to the condition of the exterior parts, the pleura is almost always healthy; but sometimes it is inflamed, and

presents even a slight serous effusion. The state of the circulation often depends upon the kind of death: commonly the arteries are empty.

The termination by gangrene is very rare, even in complications of adynamia: one of a more common occurrence, is chronic inflammation. There is, indeed, then, a remission; but all the symptoms are kept up. A sensation of suffocation is experienced, common also to the diseases of the heart. When it is not succeeded by phthisis pulmonalis, and this is seldom the case, the patient dies somewhere about the fortieth or fiftieth day. Boerhaave has well described slow peripneumonia, which, indeed, sometimes follows the acute; but which also may be independent, and ushers in phthisis.

ARTICLE II.

Of Phthisis.

Phthisis, an organic malady of the lungs, presents, in the beginning, an infinite variety, which is to be attributed to the varied progress which each affection of this organ makes, and to the diversity in the causes which give rise to it. Towards the end, on the contrary, all cases of phthisis present the same symptoms, and require then, a similar treatment.

The greatest number of authors have arranged these diseases in three classes: the first includes the beginning, the second presents the most intense symptoms, and finally, the third is the last epoch.

In the first stage, it is impossible to consider in general the symptoms of phthisis, since it may be the consequence of an infinity of diseases; consequently we shall be obliged to treat it separately. As to the second and third stages, we shall speak of them in general.

The causes which produce the first stage of phthisis, al-

though very numerous, may be reduced to a certain number of heads, as, an hereditary disposition, an acute affection of the lungs, the suppression of an evacuation, any virus whatsoever, &c.

Hereditary phthisis does not depend, as the ancients supposed, on a virus transmitted with the semen, which is only developed at a certain epoch; it must evidently be ascribed, as well as all other analogous diseases, to a peculiar conformation, proper to certain families. These differences influence as much the external conformation as the structure of the organ, so that we might say, respecting this, that every family has its temperament, which predisposes it to a certain malady, that we then call hereditary.

The conformation which predisposes to phthisis, is a feeble constitution; the skin is remarkably fine and clear; the face and especially the cheeks are more or less suffused with a blush; the chest is very little developed, very narrow, especially at the upper part, and consequently, the shoulders and clavicles are approximated to each other. The inferior part often participates also in this constriction; the formation of the sternum is also materially influenced. This conformation, nevertheless, does not always induce phthisis, whilst we meet with well formed persons attacked by it; there is no doubt that, in spite of the favourable exterior appearance, there exists with these last a predisposing cause seated in the lungs. The phthisis which follows catarrhs and peripneumonix, occurs at all ages; and is seldom to be met with after the age of twenty-five or thirty years, an epoch at which nutrition is particularly directed to the thorax. When it has for cause an hereditary disposition, phthisis is almost always tubercular. We mean by tubercles those granulations which grow by degrees, suppurate, and, by their collection, form vomicae. This affection exclusively belongs to the lungs: miliary eruptions have nothing in common with this latter affection. Authors have pretended that its seat was in the lym-

phatic glands, but we have no reason to believe it. Besides, it is very doubtful whether such glands exist in the parenchymatous structure of the lungs, for wherever they exist, they become swollen in phlegmasiæ, and become apparent, when before they were invisible; now, we do not observe any thing like them in the inflammation of the lungs. The neighbouring glands are indeed swollen in phthisis, but this phenomenon is not peculiar to this disease. These kinds of tubercles, more or less numerous, begin in the superior part; when they have become small abscesses, then others appear in the inferior portion, which also begin to suppurate whenever the vomica is formed in the parts above: the pus discharged is contained in a kind of cyst. When the affection appears, pain supervenes, the least exertion puts one out of breath, and produces cough; this latter continues always dry; it increases, general emaciation makes rapid progress; the cheeks are warm, as well as the palms of the hands and the soles of the feet. We may then be certain that there exist tubercles in the lungs. Sometimes the patient dies in this stage, but it is rather seldom; this often occurs in the second or third stages.

Pleurisies, and oftener peripneumonix, produce phthisis. Then it goes through its course as commonly, and ends in the symptoms of phthisis, which progresses by degrees; at last the patient sinks. Certain catarrhs may also produce it, and this termination is pretty common with old persons. At first, the disease becomes chronic, the cough continues, and at last phthisis appears. Hæmoptysis, in the greatest number of cases, terminates in the same manner, and this termination is itself often only consecutive to another affection. The inspiring of certain acrid and irritating vapours has been considered capable of producing this malady, but this is seldom remarked. Another cause consists in the suppression of certain evacuations, the discussion of certain voluminous tumour, the cure of an inveterate ulcer, the repercussion of certain cutaneous diseases, as ring-

worms, itch, the suppression of quartan fever on its first attack. Finally, phthisis is sometimes complicated with a scrofulous or venereal taint. Being produced by so many different causes, it must consequently vary in its mode of beginning; but when it has reached its second stage, then all the variations are confounded and have similar symptoms, and phthisis follows always the same course; it matters not what may have been the primitive cause. In the second stage of the disease, the pain in the chest begins to be sensible; sometimes it is fixed at one point, at others it is irregular, sometimes it exists in the lumbar region, at others about the epigastrium, and, what is worthy of remark, it is never felt in the part in suppuration. This pain has a very peculiar character; it has not the keenness of that of cancer, nor the character of tension of inflammation: it is a peculiar tickling. There are patients who, during the affection, do not experience this pain, although all the other signs are present. It may experience a remission; sometimes it ceases during fifteen days or three weeks, and then returns with more intensity.

Respiration is always more or less impaired. When the patient is motionless, then it is easy; but the least agitation, the least emotion of the mind, the very action of eating, suffices to excite suffocation, which obliges the patient to remain at rest. This strangling sensation is a symptom common also to the diseases of the heart; but there are certain characters by which it may be easily distinguished in both cases.

In phthisis it does not attack by fits, as in the diseases of the heart, in which it is especially manifest in the evening. At this time there is an exacerbation of symptoms in phthisis, but it is not so considerable; moreover, it seldom happens that when the patient is quiet, there supervenes an extraordinary suffocation, which is, on the contrary, peculiar to the diseases of the heart. In this latter affection, during the paroxysm, there are palpitations, the lips and nose

are livid, and the whole face is somewhat swollen. In phthisis, on the contrary, at the time of the attack, the cheeks are particularly flushed. There is always more cough than in the diseases of the heart, in which it is generally absent. It is very important to distinguish this symptom of strangling, for it is essential and characteristic; it is the more felt as the disease is the more advanced. Cough is also a symptom belonging to the affected organ; sometimes it is dry; at others it is humid; it increases especially by night, during the exacerbation of the hectic fever, as well as after meals. This cough varies singularly; sometimes it is intermittent, and appears on certain days and at certain times of the day.

The expectoration of consumptive persons sometimes consists of pus, commonly it is very difficult to decide whether the sputa contain any, for, they are very often very analogous to those which are expectorated towards the termination of peripneumonia or in catarrhs of the thorax; but this sign is little important, for, the aggregate of the others characterizes the disease sufficiently. However, the pus which is discharged presents an infinite variety: often the sputa contain none, sometimes they are partially mixed, and at others the pus is expectorated pure. Dehaen believed that pus was formed without ulceration and was discharged by exhalation, but this opinion evidently is contrary to all physiological ideas. The patient may spit clots of blood of more or less consistence: indeed we find this kind of concretion in vomicae. At other times the sputa are black or green; they seldom contain earthy concretions: nevertheless, writers have spoken of this phenomenon, and have formed a variety of phthisis from it, which they have called *calculous*; but it is a different malady, as we shall see. Sometimes the sputa contain membranous substances; are they portions of the lungs? If we confide in autopsic examination, this is possible. Often the patient discharges together with the pus, blood. Hæmoptysis

almost always precedes phthisis. Towards the conclusion there is sometimes a passive exhalation on the mucous membrane. The voice in this second stage, is altered; it becomes hoarse, although there is no affection of the larynx. Is this phenomenon produced by the distribution of the eighth pair of nerves? We know nothing about it. Percussion is a very feeble auxiliary in phthisis.

As to the symptomatic affections, digestion is more or less impaired; often there is vomiting after a violent fit of coughing, and Morton believed that this symptom characterized particularly this disease; it often occurs after eating. Towards the end, a diarrhæa comes on, the chyle is no longer elaborated nor absorbed; the diarrhæa increases, and it marks the last moments of the patient. In phthisis, there is a peculiar concomitant fever, called hectic, and that certain writers have considered, but incorrectly, as essential; it is, without doubt, because like some of the essential fevers, it experiences remissions. In the evening there is almost always an exacerbation; at first a slight chill, fever, then sweats more or less abundant, which are confined to the chest, face and neck. These sweats are evidently marks of debility; they occur particularly in the morning. The pulse has on this occasion a very peculiar character; it is small, frequent and hard. The irregularities in the temperature of the body are very remarkable; heat is particularly felt at the soles of the feet, in the palms of the hands and on the cheeks. As to the secretions, they all vary. There is first a serous infiltration of the thighs, then of the legs; we seldom have a general leucophlegmasia, it being prevented, without doubt, by the copious perspirations that occur at that time. Nutrition is singularly altered. Of all the organic diseases, phthisis is that which produces the most frightful marasmus. As to external functions, they are very little altered; the intellectual faculties preserve their integrity to the last. The functions of generation are singularly excited, and even to the

last moment the consumptive person feels an irresistible proneness to venereal pleasures. Finally, towards the last stage, the symptoms are at the highest degree of intensity; purulent sputa are often mixed with blood; diarrhæa supervenes; the extremities are very œdematous. Patients die at different periods: sometimes they perish when tubercles are forming; at others they reach the second stage; finally, they are always certain to die in the third. Sometimes a few days before death, the *facies hippocratica* is marked in the countenance, and the agony is long: sometimes, on the contrary, death is sudden, and happens whilst speaking or eating.

The autopsic examination of this disease is common, but it has been so only within these few years, for, hitherto the foolish prejudice, that phthisis was catching, deterred physicians from examining the corpse.

The lungs of all consumptive persons present the same appearance, whatever may have been the cause of the disease. They are found more or less interspersed with purulent gatherings (*foyers purulents*) that we call vomicæ, and which we observe particularly in the superior parts. The shape of these vomicæ is very irregular and variable. In the beginning the abscesses are small; but they increase in the same ratio with the disease. In certain cases, they are so numerous, that the lungs seem to be only an areolar tissue which contains them. These vomicæ are crossed by a great many bands. In the neighbouring parts, we find more or less induration, which was equally destined to go through the process of suppuration. As to the fluid of abscesses, there are cases in which we never meet with any, and where, as we have already said, it has been reabsorbed. Very often we find it in great quantity, but not sufficiently so to distend its parietes, which remain always flaccid. This pus varies in its colour and consistence; it never contains any blood.

The pleura presents a very variable condition: in certain

cases it does not adhere, but most frequently it adheres, especially above and behind, sometimes even throughout. This condition is often produced by a disease additional to phthisis. The glands neighbouring to the lungs are more or less engorged; but this phenomenon is not peculiar to phthisis, and is observed in all organic diseases, if we except those of the heart. There is very little alteration in the digestive organs; the heart is contracted upon itself, and, as well as the arteries, contains little blood; but this condition varies and may depend on the kind of death. As to the secreting organs, they are commonly in their natural state; nevertheless the liver is sometimes loaded with a considerable quantity of fat, which some have wished to ascribe to a relation of this organ with the lungs; but examples of fat liver are seen in other affections, and especially in those of children, in whom certainly it is not the effect of phthisis. In the cellular tissue there is more or less infiltration; the fat has not only disappeared, but even the nutrition of the organs is altered; they are flaccid, and reduced to a smaller size than common.

ARTICLE III.

Of Calculi.

Calculi are also an affection of the lungs. Morgagni was the first who wrote concerning them. They are found ordinarily towards the upper extremity inclosed in a peculiar cyst. It is impossible to distinguish their symptoms from those of phthisis: some have been found in a healthy lung, and from which the patient felt no inconvenience.

The lungs presents also hydatid. They form a cyst more or less considerable, as in vomicae, with this difference that they only contain water. This disease is of rare occurrence; we have no certain data to distinguish it.

Steatomæ may also develop themselves in the lungs;

they are then irregularly diffused in its tissue; they present the consistence of a fatty substance, and it is impossible to foresee their existence. Such are the essential diseases of the lungs.

Now let us examine its *sympathetic affections*. Although the lungs are an organ essential to life, nevertheless they are not so often influenced by diseases as other important organs: such as the heart, which by the least sympathetic excitation produces fever; the stomach, which causes gastric disturbances, &c. The lungs, on the contrary, seldom produce disturbance in respiration by their sympathetic affections; nevertheless, when they are very intense, this sometimes happens. It is especially then that the cough supervenes: it is observed in certain gastric obstructions, in the affections of the liver, of the kidneys, &c. Writers have quoted some similar cases which yielded to the use of the means employed against the direct course of the disease. The affection of almost every organ surrounding the lungs, presents us with this sympathetic cough. It is also observed in certain fevers which affect the whole economy; in the beginning of putrid fevers, the cough is a phenomenon purely analogous to the vomiting which is then remarked. Not only the cough is sympathetic, but also the difficulty of breathing in certain cases, as in particular idiopathic fevers. At first we should be inclined to believe that the lungs begin to be obstructed; but all fears are dissipated by the cessation of the pain. The same is the case with respect to the pains of the chest in the beginning of these fevers.

There are other considerations relative to the diverse alterations that the lungs experience at the time of death. We seldom find them, at this time, alike in all individuals. These alterations are evidently connected with the essential function of the lungs, as the centre of the circulation, which is always more or less obstructed at the moment of death. There are, on the contrary, diseases which, from

their nature, on dissection, present us the lungs empty of blood: such are hemorrhages, very sudden death, and syncope.

ARTICLE IV.

Asphyxia.

Asphyxiæ may be referred to the chapter on the diseases of the lungs. We divide them into two general classes: 1st, those caused by simple deprivation of air which takes place in a vacuum, by strangulation, by submersion, &c. And 2d, those which are produced by deleterious gases, as azote, hydrogen, exhalations from privies, as well as the vapour of charcoal.

Drowning presents the following phenomena: the lungs are more or less gorged with blood; the bronchiæ contain ordinarily a little water; we meet at the same time with a great deal of mucus; we also sometimes find foreign bodies, such as gravel. The heart is very much dilated on the right side; the veins are gorged with a quantity of blood, which we find also abundant in the arteries; the heat disappears suddenly, which distinguishes this kind of asphyxia from all others. In general, the difference in the cooling of diverse cadavers is always to be ascribed to the kind of death, and consequently we should be on our guard never to decide too hastily on the period at which the patient has expired. As to the state of the capillary system in drowning; on the external surface it is very much loaded with blood, particularly on the superior parts which are quite black, whilst the inferior extremities are very little coloured. This condition, especially of the face, agrees very well with the facility with which these same little vessels retain the red blood whilst alive. The brain presents also vessels very much engorged; as to its substance, it is in its ordinary condition.

Strangulation presents nearly the same disposition. Nevertheless the lungs are less engorged because the air has been suddenly stopped, but the veins and the arteries are full; there is often erection of the penis, without our knowing why.

In asphyxia produced by charcoal, the lungs are more or less engorged. If the death has been slow, they are very much so; and if it is sudden, very little. The heart and blood vessels are very full. At the same time that it is abundant, the blood is always liquid. Heat is preserved for a long time in this kind of asphyxia; but the fluidity of the blood is kept up long after the heat has escaped. The limbs may be bent with the greatest facility, which is not the case with the other kinds of deaths, in which state much strength is required to bend them. The superior parts are somewhat livid; there is a peculiar vivacity of the eyes.

As to the other kinds of asphyxia produced by deleterious gases, death in them is so sudden, that the lungs are very little engorged with blood: only few autopsic examinations have been as yet made relative to this kind of death.

CHAPTER IX.

Diseases of the Glands.

THE glandular system does not present, as do the preceding ones, many general characters. The parts which compose it have very few qualities in common; the nature and affection of every gland are almost peculiar to each one. Consequently it is impossible to treat of the affections of these parts in a general manner. We shall speak of them successively, following the anatomical order.

ARTICLE I.

Of the Diseases of the Lacrymal Gland.

The lacrymal gland is the first which presents itself in the head: it is perhaps the one in which organic affections are most seldom met with; most authors have never spoken of them. *Guerin* quotes only some examples of scirrhous of this gland, an affection which sometimes renders it necessary to extract it. This gland is very seldom injured, and consequently the tears are seldom altered, whilst in the diseases of the other glands the secreted fluids often participate more or less in the affection of the organ. In lacrymal tumours, the muddy appearance of the liquid is owing only to the admixture of the tears with the mucus furnished by the canal which contains it.

ARTICLE II.

Of Diseases of the Salivary Glands.

Next in order come the salivary glands: they are divided into three species, the parotid, the maxillary and the sublingual glands; they have a similar organization. In general they are very little susceptible of organic affections; nevertheless they sometimes occur.

The parotid experiences some essential maladies, and some others which are symptomatic. Tumours of the parotid (*ornilloes*) which are very common, seldom reach the suppuratory stage. They are especially observed in children. Is their seat in the very parenchymatous texture of the gland, or in the surrounding tissue? The enormous extent of the swelling, in certain cases, induces us to believe the latter; perhaps the tissue of the gland participates in it also. When there happens an abscess, the pus is simply phlegmonous, and penetrates sometimes even to the gland, but its principal seat is in the anterior part. Sometimes the parotid is nowise interested, as in abscesses situated in the arm-pit, the glands of these parts are not always affected.

Its symptomatic affections are better known. Parotites are swellings of this region which supervene in adynamic fevers. These swellings have evidently two different seats: first, they often occur in the lymphatic glands, which are very numerous in this part. It is easy to distinguish this case: the glands are hard, moveable, roll under the finger, and preserve even in their swollen condition their primitive form; they sometimes acquire a considerable volume; they seldom present purulent abscesses. In the second case, it is the tissue subjacent to the gland which is engorged; the gland indeed participates partially in the affection, but it is not the principal seat. The chronic affections of the parotid are of rare occurrence; it becomes

scirrhus, and then it is resolved with great difficulty. Its excretory duct may present a fistula, which may also have its seat in the gland itself. When an abscess has denuded the interior of the parotid, the saliva which it contains oozes out, arrests the cicatrization of the abscess, forms callosities, and induces a fistula in the stensonian duct. It is perhaps the presence of a foreign body, a sore, &c., which occasions the fistula. These orifices discharge more or less saliva; there are some which discharge it only after being compressed. There are several methods of curing them.

The sublingual glands are also the seat of symptomatic and idiopathic affections, but of more rare occurrence than those of the parotid. We ought always to distinguish the swelling of these glands from those of the neighbouring lymphatic engorgements. Their symptomatic inflammation seldom occurs. The duct of *Wharton* or the *Rivinian* ducts present a peculiar disease called *ranula*;—it is a collection of saliva produced by the stricture of this canal. This obstruction is the same as that which induces the lacrymal tumour: the cause may be a swelling at the orifice, an aptha or a pustule of small-pox. To cure the disease, the tumour is opened, and there issues from it a fluid of the consistence of the white of an egg, and fetid smell. A fistula is produced, whence the saliva is freely discharged. Seldom does the disease persist; it is common to have a relapse.

ARTICLE III.

Diseases of the Liver.

No organ is more frequently affected than the liver: sometimes its diseases are in common with others, and sometimes they are proper to itself. We shall first speak of its idiopathic diseases, and then of its symptomatic affections.

Inflammation is its most frequent affection, but most

frequently it is not acute. The ancients divided it into erysipelatous and phlegmonous; but this difference has no foundation, since we understand by these two appellations the inflammation of the skin and that of the cellular tissue. Every organ, as we have already observed, differs in its inflammation as it differs in its structure.

To form a correct idea of hepatitis, we must bring to mind the situation of the liver. We know that it is not covered by any membrane belonging to it, but that it is almost completely invested by the peritoneum, and that its posterior part is closely connected with the diaphragm. We know that the peritoneum may be affected all over and about it, without the liver participating in its inflammation, as in peritonitis and puerperal fever. Therefore we must only understand by *hepatitis* the exclusive inflammation of the liver, which may be, indeed, complicated with that of the peritoneum, as peripneumonia is complicated with pleurisy. The inflammation may occur in different parts of the liver. Whatever may be its seat, it has certain general characters which render it different from the other phlegmons: at first there is more or less pain in the right hypochondrium, often also in the epigastric region, and sometimes in the left hypochondrium. This pain has not, in general, the keenness of that of peripneumonia; the epigastrium is more or less painful under pressure; the patient can lie down, only with difficulty, on the right side; digestion is sometimes disturbed according as the superior or inferior part is affected.—Jaundice can not be considered as a constant sign of hepatitis, since it may supervene in an infinity of other cases. Such are the symptoms common to the whole organ. There are some others which depend upon the particular part inflamed. If it is on the convexity, there is hiccup, corresponding inflammation of the contiguous part of the diaphragm, and sometimes of the pleura, so that an affection of the chest supervenes, and consequently it is difficult to distinguish the two diseases. If the

seat is in the concavity, then there are no pectoral symptoms, but more frequently vomiting, and a greater distension in the right hypochondriac region.

The symptomatic phenomena are diarrhæa or constipation. The pulse is small, and frequent; the fever is subject to an exacerbation, especially towards the evening; the condition of the secretions and exhalations varies.

As to the termination, it occurs on the twelfth or fourteenth day; it may occur still later: we have no very precise observations on this subject. Resolution is manifest by the remission of the symptoms; there supervenes often a disturbance in the secretions, which indicates the crisis; and which is especially apparent in the urine.

Suppuration in the liver is not unfrequent; it occurs differently, according to the seat of the inflammation. When the abscess is in the concavity, some authors have asserted that the pus conveyed in the biliary ducts might fall into the duodenum: but this very favourable termination seldom happens. When the abscess is in the convexity, adhesion of the diaphragm supervenes, as well as the pleura, which is perforated, and the pus flows in the chest, whence it is discharged by expectoration. Authors have related several instances of this result; but when the abscess is in the middle of the viscus, the pus does not find so favourable an issue, is discharged into the abdomen, and the patient dies. Nothing is more common than these abscesses in injuries of the head. The signs of this termination are little known. The abscesses which constitute these purulent collections, (*foyers*) are callous at their circumference; they are crossed by vessels which form kinds of bands; there are never any cysts as in hydatids. Gangrene of the liver, although of a more rare occurrence than suppuration, nevertheless happens sometimes.

Chronic inflammation is very difficult to distinguish. Authors have mistaken for it a great many different dis-

eases, that they have named under the vague appellation of *obstructions*.

The organic diseases of the liver are numerous. In order to simplify them, we shall classify them under different heads: first, those which are attributed to the increase or diminution of the liver, *steatomæ*, *hydatids*, granulations, the fatty state, and lastly certain affections much more serious.

The *extraordinary size* of the liver, without any visible cause to produce it, varies; sometimes it is thrice or four times larger than in its natural state. This enlargement differs very much from that of the lungs in certain cadavers, in which it is only enlarged because it is engorged with blood; but in the liver, it is by the addition of real substance. We do not know the concomitant affection of this disposition, and we do not know to what we should ascribe it.

The *diminution of volume* is also observed in the liver without any organic affection. It sometimes accompanies an ascetic dropsy, which compressing this viscus towards the diaphragm, flattens it very considerably: a condition which we also often observe in the lungs in cases of hydrothorax. It has been supposed, but without foundation, that there existed subjects in whom the liver was almost totally wanting.

Steatomæ are whitish tumours that we meet with in many parts of the body, such as the cellular tissue, &c. They assume in the liver a very peculiar aspect; they may occur in any part of the organ, except in the gall bladder and its ducts, in which none are ever found. Their number is variable. Sometimes they take almost entire possession of the substance of the liver; they are at first not very voluminous, however, they soon augment considerably. The tissue of the liver is nowise altered, and secretes, as in its normal state, the bile, which does not experience any alteration in its course. We are ignorant of the nature of

these alterations. The steatomæ are never surrounded with cysts. The interior presents a lardy, striated and hard substance; but without any vascular plexus. Sometimes these tumours are formed in the adjacent parts of the liver: this malady does not then exclusively belong to the tissue of the lungs. Can we distinguish these tumours in the patient whilst living? This is difficult, for nothing is more vague than the signs given by authors on what they have included under the names of *Obstruction*; nevertheless, there is more or less pain in the region of the diseased organ, and this latter projects outwardly more or less. Sometimes this projection occurs rather in the epigastrium, but we can seldom employ this as a guide, for ordinarily there exists at the same time an ascites. We must cause the patient to lie on the back or on the left side; then to take a deep inspiration so that the liver may protrude; but the strong and simultaneous contraction of the abdominal muscles renders this means less efficacious than it would appear at the first glance.

Granulations of the liver are often found with dropsical subjects, or those extremely emaciated, but in whom there exists no apparent disorganization. When this viscus is divided, we find an infinity of granulations near each other, which give to it the appearance of granite. This state is never complicated with the extraordinary volume of the liver; on the contrary, it diminishes and doubles its density as well as its tenacity; it loses then its elasticity, and breaks rather than stretch. What is the nature of these granulations? We know not; sometimes they are gray, at others they are reddish, and sometimes they seem coloured by bile; we are equally ignorant in regard to the signs which denote their existence in a patient.

Fatty Liver is a condition of the organ very common, particularly with children: it is then remarkable for its yellowish colour. Sometimes the size never changes, and at others it augments. The exterior is untouched and smooth;

it has a peculiar lubricity to the touch; we very seldom meet with any blood. We can not doubt that it is adeps which is infiltrated in the substance of the liver. This affection is easily proved. Fat is not here as in the cellular tissue, deposited in cells, but it seems as if it were effused. Is this disease symptomatic or idiopathic? we can not decide; all we know about it is, that sometimes it coincides with phthisis or other similar organic affections. Most frequently it is met with in young subjects, which, however, are in other respects perfectly healthy. It has been observed also, that it exists in an inverse ratio to the quantity of adeps on the exterior surface of the body, and that subjects whose livers are very fat are commonly very thin.

Hydatids are also another affection of the liver. We find them, too, in many other parts. They are small bladders full of water, more or less large, collected always in a common cyst. This cyst occupies almost always the concavity of the organ; it has an irregular form; its internal surface is rough and presents sometimes small points of ossification. It has no extensibility, it breaks on the opening of the subject. It presents a very peculiar elasticity. When we open this bag, there issue from it a great many little balls insulated from each other, and not adhering to the common cyst: they escape in greater or smaller quantity at the instant of the opening. There may be as many as a hundred, and then they are smaller. These bladders must be considered with reference to their membranes and to the liquids which they contain. There exist two kinds of membranes: the one thin and transparent, through which we may see its contained liquid; the other opaque and thicker. Sometimes these two kinds of membranes exist in the same hydatid. What is the nature of these membranes? Hitherto they were supposed to be an expansion of lymphatic vessels, but it is asserted in our day that they are real worms, whose structure, indeed, imperfect in man, is more obvious in certain animals, such as the

sheep and the ox. This opinion seems the better founded, since these vesicular balls are entirely free from the surrounding parts: their nature deserves further research. These bladders contain a fluid which is more or less copious, sometimes clear and at others muddy; one thing worthy of notice is, that we find some extremely full and others empty. The fluid they contain is not albumine. We are ignorant of the cause which induces hydatids. We are also ignorant of the signs of their formation; these signs must necessarily be common to many other diseases. Besides, there is almost always leucophlegmasia. This affection is beyond the power of the healing art.

ARTICLE VI.

Diseases of the Liver.

The affections of the gall-bladder are of a different nature. We shall treat of them, beginning with *retention of the bile*. Although this affection be more unfrequent than the retention of urine, nevertheless we observe it pretty frequently. It may be ascribed to three kinds of causes: to the swelling of the parts neighbouring to the ductus communis choledochus; to that of the internal membrane of this duct; or, lastly, to concretions.

The first cause is very common. The pancreas is subject to become hard and scirrhus, which produces a compression of the ductus communis choledochus, that causes the bile to flow back into the gall-bladder and liver. This same condition may be determined by the sub-hepatic glands: this happens pretty often in cancer of the stomach. We must observe that the phenomena are different, according to the part which is compressed by the obstacle. If it be the ductus communis, the bile flows back even into the tissue of the liver and gall-bladder; if it be the cystic duct, the repulsion is only in this latter. The greatest

number of chronic cases of jaundice, which are of five or six months standing, are produced by the compression of the ductus communis.

As to the engorgement of the mucous membrane of these ducts, it is not as yet sufficiently understood, and we shall say nothing about it.

Stones in the gall bladder are very frequent, and the number there met with is very variable. Their colour is sometimes yellow, at others black; their shape is mostly conical or pyramidal. These calculi have a peculiar composition, and differ from the urinary in their chemical analyses. They may be found in two different conditions: sometimes they are accompanied with more or less bile, sometimes (and then they are very voluminous) they are closely invested by the membrane of the bladder, and they are in a manner impacted together. Calculi sometimes obstruct the biliary duct, if they are not too large; then the phenomena that they produce are different according to the part where they stop. When it is in the cystic duct, they produce the engorgement of the gall-bladder; if it be in the ductus communis, they produce also the biliary infiltration of the substance of the liver. Sometimes we meet with these stones in the substance of the latter, but it is rather uncommon.

It is very difficult to detect the existence of these calculi in the living subject, whatever authors may say; we could at the best but suppose them, from certain general signs. When jaundice supervenes without any apparent cause, and there is a pain in the region of the liver, then we may believe it to be caused by a calculus.

Jaundice is never an essential malady of the liver, but always the symptom of another affection; it consists in the effusion of bile in different parts of the body, and is not confined to the skin, as it was supposed by the ancients. Jaundice may be induced by different causes, which may be included under certain heads. The first are the spas-

modic affections of the liver in sad passions, such as anger and fright. In a multitude of other affections of the mind, it is impossible to determine how this happens; but the sudden sensation which is produced by the moral affection, in the region of the liver, does not permit us to doubt that jaundice is induced by the alteration of this organ: this cause is the most frequent. Emetics or violent purgatives may also produce it. It supervenes also pretty often in nervous affections; in this case the liver seems not to be altered in its substance.

Another series of causes of jaundice are the affections of the liver, such as its inflammation; but it is not an invariable consequence. There are others, which do not attack the liver, acting only on the biliary ducts; such are all those which may produce the retention of bile, for example, the engorgement of the pancreas. These causes differ from the preceding one, inasmuch as, in the first, the bile is pumped back again before entering the biliary ducts, whilst in this last case it is only so, after flowing back from these same canals. The sympathetic influence that other diseases have on the liver may determine jaundice, as is observed in certain bilious dispositions, in which the eyes are yellow; in certain fevers, in which there is a general yellowish tinge; and in certain cases of poisoning, in which the result of the general disorder extends also to the liver.

Causes altogether different determine the *icterus* of infants, a very frequent affection. Several modes of explaining it have been admitted: some have supposed it to arise from the presence of meconium in the larger intestines; others have ascribed it to drinks that were given too early to children; but very often this *icterus* is not influenced by these causes; it is rather to be ascribed to the general changes which then happen. Nevertheless, which ever may be the cause, this disease is always the same; it begins by a retention of urine, which always presents the same phenomena, whatever may be its origin.

These are the phenomena of jaundice. It is incontestable that its proximate cause is the reabsorption of bile, which is carried into the different organs, even when its ducts are free; by this means, it does not fall into the duodenum; and indeed the fæces are pale, discoloured, sometimes whitish, and very consistent. None of the parts coloured by the bile in jaundice are diseased. There is no tissue which is not touched by this yellowish tinge; the cellular tissue, the muscles, the nerves, the bones, even the substance of the brain, the cartilages, tendons, and generally all the white parts present a tinge more or less characterized, which is, without doubt, to be ascribed to the contrast of these two colours. Liquids also are influenced by the bile; the blood assumes a greenish tinge; as to the secreted fluids their colour varies. Saliva does not change, but the urine acquires a very deep yellow colour.

Since the causes of jaundice are so different, the treatment must vary also, because it is subordinate to these causes. This disease is either acute or chronic, as the affection on which it depends is of the one or the other character.

The *symptomatic affections of the liver* are very common and numerous. Whatever may be the functions of this organ in the economy, which without doubt are very important, although we are ignorant of a great number of them, it is united by sympathetic relations with all the other organs; the brain especially is never injured, without this organ experiencing a sympathetic reaction. Every kind of hypothesis has been exhausted to explain this sympathy but they are insufficient. Most fevers induce a gastric affection in which the liver acts an essential part; for example, in vomiting of blackish substances, in which we can not doubt that bile is more abundantly secreted. In chronic affections, the same influence is remarked: the diverse colours of the bile indicate it sufficiently. It is sometimes black, at others yellow, white, thick, presenting

solid concretions; and then viscous, ropy like the white of an egg, and sometimes limpid as water. These differences help to explain the different colours of the fæces.

At the instant of death, the liver experiences certain alterations necessary to be known, on dissection: in asphyxia, it may be considerably engorged with blood, which happens also in all the other diseases, in which, as in this latter, there is a great flux of blood to the right side of the heart. The liver is then not swollen as the lungs, and does not acquire a greater volume; but when cut, it discharges a great quantity of blood.

ARTICLE VII.

Diseases of the Kidneys.

The kidneys are double organs, situated on each side, in the abdomen, on the lateral parts of the vertebral column. They are the organ which secretes urine. On the upper extremity of each kidney is situated the capsula renalis, a gland, bigger in children than in adults, and which for this reason, is little exposed to the diverse affections that we meet with in others, by this physiological law, that *the parts most nourished and the functions of which are the most important, are also most frequently and most seriously affected.*

As to the affections of the kidneys, they may be either idiopathic or symptomatic. One of the former, is their inflammation, known under the name of *nephritis*. It may be itself idiopathic or symptomatic, which is often very difficult to distinguish. In all cases, there is a very violent pain in the lumbar region. This pain differs from lumbago inasmuch as it is not increased by the touch, never changes its place, and is not superficial; besides, the urine is more or less troubled, a character which may be of some service to distinguish a phlegmon seated in the

cellular tissue of the renal regions. Often one kidney alone being affected there results from it but very little inconvenience. If suppression of urine supervenes, then we may be sure of the existence of nephritis.

As to the general signs, they are often very much multiplied, but do not aid the knowledge of the disease. Thus as to digestion: more or less thirst; often vomiting; at other times diarrhæa; then again constipation; small and feeble pulse, varying according to circumstances.

Another nephritis, accompanied by more certain signs, is that produced by calculi. Often these foreign bodies cause no pain; often also they cause an extreme irritation, a very violent pain in the renal region, which does not increase under pressure; and there follows suppression of urine when the two kidneys are affected. Often there occurs retraction of the testicle on the affected side. The pain changes its place as the stone does; often also the urine is bloody. The preceding phenomena may also lead us to suppose the disease, if the patient has previously passed gravel, and if there exists an hereditary predisposition in his family. As to the general symptoms, they are the same as in the first kind of nephritis.

These affections produced by calculi are not always positively inflammatory: sometimes they are colics of a longer or shorter duration, which cease and then return. This shade of affection produced by calculi is the most frequent.

The stones formed in the kidneys present an infinity of forms, and are various in number. Sometimes they are so numerous and so small that they resemble sand; at others there is one alone which is as big as a pigeon's egg and fills the whole pelvis where it is developed. Commonly unequal and rough, they are sometimes polished and smooth: their weight varies also; sometimes the surrounding parts preserve a smooth surface, at others there occur fungi.

Sometimes the calculi drop into the urethra, where they

seldom occupy the middle part; then the canal is dilated and accommodates itself to the volume of the calculus: none are more dilatable than it.

Nephritis, idiopathic, and calculous, terminate in different ways. Ordinarily the disease is suspected by a more abundant secretion of urine: this seldom happens when calculi are present, they often determine, on the contrary, the suppuration of the kidneys, a condition which we must be aware to distinguish from that in which mucosities are sometimes discharged along with the urine. Sometimes the pus is discharged through an abscess which is formed on the lateral parts. At first there supervenes an adhesion by inflammation, then the pus spreads, gathers in an abscess under the skin, which ulcerates, and permits, at last, the purulent matter to escape. Sometimes calculi are discharged in this manner; their extraction induces sometimes the entire cure of the disease when they are the cause of it: often there remains a fistulous opening. Gangrene of the kidneys is of very rare occurrence; Chopart alone has spoken of it: its chronic inflammation is very common.

Hydatids are a pretty frequent disease of the kidneys; they are of two kinds which we must distinguish; the one, called serous cysts, and which happen on the surface; they are more or less large, differing in their number, and composed of a membrane full of yellowish serosities, which sinks a little into the surface of the kidneys. The other kind is a true hydatid, which is to be found every where, as well as in the kidneys; and is observed in their interior. We have no means by which we may distinguish it, except when some are passed in the urine.

As to the other affections of the kidneys, such as worms, &c., the ancient authors alone have spoken of them; autopsic examination has never verified them to the moderns.

The kidneys may be also in a very peculiar state of flaccidity; they are at the same time increased in volume: the arteries are contracted as in dropsy.

There exist also some other alterations of the kidneys. Thus, Morgagni speaks of a kidney, the surface of which was cartilaginous; Lieutaud has seen three kidneys petrified; but these phenomena are not regarded as diseases.

The symptomatic diseases of the kidneys are very numerous; indeed, few organs are more influenced, in their substance or in the fluid they secrete.

We can not deny that the diverse conditions of the kidneys in the subject, are caused by the influence of diseases on this organ, since in a healthy state the same organs are always of a uniform appearance.

The alteration of the urine is indubitable in almost all these affections. We may classify the causes of this phenomenon under different heads.

The first comprehends those affections which act on the urinary organs, and they are not at all symptomatic.

The second includes those which are induced by the state of the other secretions; for example, the urine diminishes commonly in proportion to the augmented secretion, or more considerable exhalation of any other fluid.

The third embraces those which are simply sympathetic; for example, on the attack of putrid fevers, in the accession of intermittent fevers, the urine is loaded with lateritious sediment. The attack of all the phlegmasiæ present in general the same phenomenon; in a word, all diseases cause the urine to vary, in its quantity as well as in its nature.

The urine is often an excretion that nature selects to bring about the crisis of the disease, according to the systems of ancient physicians, who invented this doctrine of crisis. We shall not examine here if it be correct, we shall say only, that there are many diseases which terminate without it. However, in the conclusion of diseases, the urine acts always the most important part.

ARTICLE VIII.

Diseases of the Prostate Gland.

The prostate is, as we know, situated at the neck of the bladder; it pours into the urethra a liquid, of the use of which we are as yet ignorant. The affections of this gland seldom supervene before the age of puberty, but at this time they are very frequent. These affections of the prostate were never well known till now. The ancients supposed the seat of gonorrhœa to be in this gland, because they had neglected post-mortem examinations, which would have set them right. It may be the seat of inflammation, suppuration, of scirrhus, engorgement, varices, or calculi.

Inflammation supervenes after a contusion, a fall on the perineum, or any other cause; it is manifested by heat, weight in the perineum, a deep and dull pain on the anterior part of the rectum, difficulty of passing urine, tenesmus, a sensation of obstruction on the anterior part of the rectum: on the introduction of the finger into this latter, a tumour is felt, painful to the touch. Petit believed that the fæces were moulded on the anterior part, to its form. This inflammation advances always very slowly; the one which disappears soonest is that which supervenes after the operation of lithotomy. When the resolution is going on, the symptoms diminish, the urine flows with more freedom, tenesmus is not so frequent, and the pain attending on alvine evacuations is not so great.

Often the prostate suppurates; then the symptoms yield but in part; there is always a difficulty in urinating and in passing fæces. Pus does not destroy the substance of the gland, but is infiltrated as in parotitis; sometimes it accumulates and forms an abscess, which, projecting above the level of the skin of the perineum, erodes it, and discharges exteriorly; sometimes it opens in the urethra. Desault

has seen a similar case which supervened when he was attempting to sound the patient. Gangrene is of very rare occurrence in the prostate: Chopart quotes an example of it.

Induration, on the contrary, is very common to this gland after venereal diseases: this induration is with great difficulty remarked on the exterior; it is not felt on the perineum; it is necessary to introduce the finger into the rectum. When the engorgement is considerable, it is easy to discriminate; but when it is small, often we do not suspect it. This engorgement presents itself under two different conditions; sometimes it is enlarged without disorganization, at others it is a true scirrhus: however, we seldom see cancer supervene in it. We also observe certain fistulæ, often caused by lithotomy.

Varices are a very rare disease of the prostate; the occurrence of them has been very much exaggerated; indeed, there are some induced in the neighbourhood of this gland; but this accident is common to the whole pelvis. We never observe any in its tissue.

ARTICLE IX.

Diseases of the Testicle.

The testicle, like the prostate, is exempt from maladies before the age of puberty. At this time it acquires a degree of life more considerable; it becomes at the same time much more exposed to affections. Its position is not always the same; when the subject is very young, it is yet at the ring; by degrees it descends into the lower part of the scrotum. Sometimes it remains in the middle, which is not very uncommon. The testicle is subject to several diseases.

The disease to which it is most exposed, is *inflammation*. It may result from many causes, pressure, irritation, and venereal causes. These are its phenomena: at

first there is an augmentation of volume, an essential difference from the inflammation of the liver, renes, &c. This phenomenon is not produced by the surrounding cellular tissue, but by the tissue of the organ itself. There is, however, some flaccidity, a very acute pain, and on pressure, it is extremely painful. This pain extends even to the loins, which gives to it a great resemblance to the pains experienced in the affections of the matrix. The surrounding organs, all more or less experience a degree of inflammation; not only the tunica vaginalis is interested, but also the skin of the scrotum is evolved and swollen. When the disease is light, the fever is not very intense; but if it increases, so does the fever in the same proportion. It is seldom complicated with other affections, such as gastric disturbance. This inflammation sometimes is so very slight that it hardly deserves this appellation, as that which supervenes after the operation for hydrocele. A slight contusion may produce the swelling of the testicle, which remains painful for seven or eight days, and then resumes its natural state. However, this inflammation ordinarily comes to a crisis very slowly, and not till the twelfth or eighteenth day. Resolution is often obtained, especially when the inflammation is produced by a repelled gonorrhœa. Sometimes there occurs an abscess, which we must take care to distinguish from hydrocele of the tunica vaginalis. Gangrene seldom occurs; induration is the most common termination, the testicle remains always swollen. We can not then say that it is a chronic inflammation, since it remains in this condition during the whole life without any inconvenience; but when, after inflammation, it is hard and scirrhus, a sarcocele may supervene.

Sarcocele is not always produced by inflammation; most frequently it has a different cause, such as a blow, a bruise, &c. At first the swelling is not painful, it soon becomes more sensitive, and at last the disease is characterized. Ordinarily many varicose veins are observed. The organiza-

tion is already changed, all the small ducts have contracted adhesions between themselves. The patient still neglects to wear a suspensory bag.

In the second stage, the volume and the hardness considerably increase. It is this peculiar hardness which gives to it weight and causes us to distinguish it from hydrocele. The pain, which becomes lancinating, sometimes is propagated even to the loins and superior part of the thigh. Often the spermatic cord, at this time, already shares in this affection. The lymphatic glands participate also in the engorgement. Even the mesenteric glands may be interested. Then the substance of the testicle is entirely changed. It is a fatty, shapeless, dense, and consistent mass; the vessels are very much enlarged. The tunica vaginalis is sometimes found adhering, sometimes infiltrated, or in its natural condition.

Finally in the last stage, we have an abscess full of pus, which is always accompanied by very violent pains; it opens on the external surface, and there results from it an ulcer, which presents all the phenomena of cancer; excessive pain of the abdomen, marasmus, slow fever, pain, and brittleness of the bones, &c.

As to the other affections of the testicle, they are very rare. The *Spermatocele* is nothing else than the too great accumulation of semen in the seminiferous ducts of this organ, and is almost never observed.

Varicocele is not, properly speaking, a disease of the testicle. It is remarked most frequently along the spermatic cord.

There are also certain affections of so little consequence, that we can not describe them in particular, such as the ossification, which we meet with in sarcocoeles.

As to the symptomatic phenomena, they are of very rare occurrence.

ARTICLE X.

Diseases of the Mammæ.

The mammæ in their diseases follow the same order as the genital organs; they are very little subject to any disease before the age of puberty, and almost never experience any sympathetic affection.

Inflammation of the mammæ is generally of very rare occurrence, except at the time of lactation, but at that period they are very susceptible of it. It follows the same stages as in simple phlegmon; the least cold, the slightest contusion produces it; the milk becomes serous, its secretion ceases, and the bosom swells. Often the disease is confined to the twelve or fifteen days immediately after delivery. The mammæ often become very hard, which is produced by the stagnation of the milk in its ducts. When this engorgement does resolve itself, pain follows, and sometimes inflammation: there is no redness, because the affection is deep seated, but there is a pungent heat, and a sensation of throbbing. As to general symptoms, there is always concomitant fever. Sometimes there is gastric disturbance, which is especially observed in hospitals. Often-times resolution terminates the disease, but often also supuration supervenes. This collection (*dépôt*) is then improperly called lacteous (*laiteux*). When it is superficial, it turns into an abscess as in phlegmon, but when it is deep seated, fluctuation is not felt till late, the pus is diffused and is discharged by seven or eight orifices. When we open these collections we see that the cellular tissue is alone the seat of them. The gland is not affected, it is only a little red. This state of suppuration is purely analogous to that of the parotids. Gangrene is very rare. Induration supervenes oftener, and this exposes the patient to cancer.

Cancer of the mammae may be induced by many other causes besides the induration produced by their inflammation. The suppression of the menses, a blow, &c., may be the cause of the development of a little gland, at first moveable under the finger, afterwards enlarging and constituting the rudiment of cancer. Whatever may be its cause, the following are its progressive stages.

In the first stage the patient neglects a small tumour, which, at first indolent, becomes by degrees painful. Shooting pains are felt from time to time, the general way in which cancers begin.

The suppression of the menses, or the repetition of a blow, often determines the second stage. The gland enlarges, the breast is generally affected, having a knotty unequal surface, sensible to the eye and touch. This engorgement, although moveable, is very hard, the whole substance of the breast is tumefied, and varices supervene. The pains increase and become less intermittent. The neighbouring organs begin to participate in the disease. The collular tissue becomes engorged, forms adhesions, and causes the inequalities to disappear; the neighbouring glands, particularly the axillary, become swollen. Is this enlargement a presage of cancer, or is it only a mere symptom of cancer already existing? It seems that most frequently this phenomenon is only symptomatic in these glands.

In the third stage of cancer, there supervenes an inflammation which produces an abscess, the edges of which are inverted. There occur fungous growths; from which there is discharged a fetid and corrosive ichor. All the parts are disorganized; reabsorption takes place, slow fever supervenes, the patient is emaciated: at this time, the operation would be useless.

ARTICLE XI.

Diseases of the Spleen.

The thyroid gland and spleen are as little known under their physiological relation, as under that of pathological anatomy. The ancients have associated the diseases of the spleen with those of the liver; but we have not a sufficient number of observations on its affections to affirm or controvert this opinion.

Inflammation of the spleen is of rare occurrence. Sauvages and other nosologists, who have never made an autopsic examination, have given many signs by which to detect it, but nothing is more uncertain. The lively pain felt in the left hypochondrium, may often have its seat in many other places besides the spleen. The positive signs which we fix upon in organic diseases, almost all relate to the lesion of the functions of the affected organs: then, since we are ignorant of the use of the spleen, we can not recognise any signs which positively indicate its affection. Autopsic examination does not enable us to discover any trace of the acute diseases of this organ. Suppuration seldom occurs here. The portion of the peritoneum which covers the spleen, is, on the contrary, very subject to inflammation. We judge of it, by the frequency of adhesions met with in these parts.

An affection of the spleen, pretty well known, is the *tumefaction* which may succeed to certain intermittent fevers, especially those which have a quartan type. We can not ascribe this accident to the abuse of cinchona, for it has been observed to supervene in cases in which this remedy had not been exhibited. We are seldom able to discriminate the swelling of the spleen, at its beginning. Its size is not appreciable, the weight in the part is almost insensible; but after a certain time these signs become more

observable. The tumour is very visible, and manifest to the touch. The pain is more intense. In order to ascertain these symptoms, we must cause the patient to assume a suitable attitude. In time, there supervene divers other symptoms, such as anorexia, marasmus, slow fever, and commonly dropsy. Nevertheless, some have been observed to persist without this fatal termination.

Autopsic examination presents the spleen more or less voluminous; some have been observed as large as the liver. It preserves nearly its primitive shape. The tissue is a little more dense and hepatized, the blood vessels are considerably enlarged; they remain dilated when they are cut transversely.

As to the affections of the spleen, with regard to vomiting blood, and melancholy, they are mere visionary things.

The spleen has sometimes been found cartilaginous and osseous. Haller relates some cases.

We can not doubt that many diseases have an influence on the spleen; to convince ourselves, it is only necessary to compare the spleens found in healthy animals, with those that we daily meet with in cadavers: it will be seen that in the latter, most frequently, the spleen presents material differences. Sometimes it is shrunk; at others it is infiltrated with an ichor, similar to the sediment of wine. In most epidemic diseases, we frequently find the spleen tumefied, brown, blackish, and flaccid.

ARTICLE XII.

Diseases of the Thyroid Gland.

The thyroid gland, the use of which is not known, differs from other glands in its diseases. It is seldom the seat of inflammation. It is most frequently the seat of engorgements; sometimes the patient experiences so very violent pains, that an operation is indispensable.

Its most common disease is goitre or bronchocoele; sometimes it is hereditary, and at others endemic; lastly, sometimes it occurs spontaneously. Women and young persons are more subject to it than adults and old men. Its size is variable; some have been observed to descend as low down even as the breast. The surrounding organs are seldom affected. The cellular tissue nowhere adheres to it. No disturbance occurs in the economy. Its texture sometimes presents calcareous granulations in the interior of the engorgement. Sometimes there is an infiltration of a yellowish fluid. We are ignorant of the cause of the relation which exists between the swelling of the thyroid, and the state of the intellectual faculties in *Cretins*.

CHAPTER X.

Diseases of the Cutaneous System.

THE diseases of this system are very frequent, which is to be attributed, without doubt, to its being more exposed to the action of exterior bodies. We shall divide them into two classes, the *idiopathic* and *symptomatic*. There are some diseases which seem to hold a middle course between these, as the pustules of miliary fevers.

ARTICLE I.

Of Erysipelas.

The inflammation of the skin known under the name of *erysipelas* may occur every where, but particularly on the face and arms. Sometimes it is produced by external, and at others by internal causes. Any active application, any

considerable heat, the action of rubefacients, exposure to the violent rays of the sun, &c., may be the external causes. The internal ones are also very numerous; for example, after certain diseases, and at the crises of some others; as, in adynamic or ataxic fever, erysipelas is only symptomatic. It may, nevertheless, be idiopathic, produced by an internal cause. However, it presents very great varieties in its intensity. There is an infinity of degrees between simple redness, produced by being too near the fire, and the most intense erysipelas. The skin, of all the systems, is the most susceptible of being suffused, because of the multitude of small blood vessels which every where penetrate it. The muscular and cellular systems redden more slowly.

Almost always, essential erysipelas a little intense, is preceded and accompanied by a febrile disturbance. These are the symptoms: redness more or less lively and more or less extended; sometimes there is mingled with it a peculiar yellowish tint. This colour is confined to the surface of the skin; the chorion is commonly healthy and untouched. The redness disappears under the finger. There is a moderate tension, but superficial. When erysipelas is complicated with phlegmon, the tension is more or less considerable. The pain has a peculiar character, it is a sensation of an acute burning, depending upon a peculiar mode of sensibility in the skin. This itching pain has been supposed by the ancients to be produced by bile. The skin is commonly dry; sometimes it is covered with phlyctænæ, which contain a serosity more or less acrid; they open and desquamation supervenes. The organs adjacent to the skin may be affected, the cellular tissue also becomes affected, and then there occurs a phlegmonous erysipelas: sometimes, instead of becoming inflamed, this tissue becomes œdematous. The former injurious practice of puncturing the feet in very much advanced leucophlegmasiæ, often caused erysipelas to terminate in gangrene.

General symptoms are pretty numerous: when the dis-

ease is slight, they are very little appreciable; but if it be intense, then there are gastric symptoms which proceed sometimes from the liver, at others from the stomach, such as diarrhæa and vomiting; there exists also a concomitant fever, as in a multitude of phlegmasiæ. Sometimes they assume a troublesome character, such as adynamia or ataxia. As to the secretions and exhalations, they vary singularly; the vital forces are more or less altered.

The termination may be brought about in several different manners; the mildest, is that which consists in a gradual disappearance of the symptoms; then there is desquamation. Phlyctænæ often supervene, as we have already observed; but they do not resolve the disease, which runs through all its stages. At other times the termination is in œdema.

Another kind of termination is the translation from one place to another, as in rheumatism. This species is called moveable (*ambulante*); sometimes it is translated to the interior, especially if discutients have been used; and in this case, diseases more serious than the erysipelas itself may supervene. Most frequently suppuration is induced; then erysipelas is complicated with phlegmon. Lastly, sometimes gangrene is remarked by the lividity of the skin, the diminution of heat and finally the gangrenous eschar.

Erysipelas differs according to the different parts in which it is manifested. On the head it is often owing to an exposure to a hot sun, and is the more dangerous in proportion as cerebral symptoms are manifested. The face is the part where erysipelas is most frequently present, which, without doubt, is to be attributed to the peculiar organization of the skin of this region, and to the great liability, that, the small vessels have to admit blood, as we observe in various emotions of the mind. On the trunk, erysipelas assumes a peculiar condition; it is then known

under the name of *zona* or *herpes*: it successively goes round the body, so that it only heals in one place to break out in another.

ARTICLE II.

Burns.

Burns of the skin are affections produced only by an external cause; they seldom extend beyond this system. Burns vary according to the intensity of the heat. A moderate degree will augment perspiration and produce favourable effects; but a higher degree of caloric affects the vital forces of the part, and even goes so far as to disorganize it. If placed too near the fire, there supervenes a redness very analogous to that of erysipelas, which lasts more or less time. Heat, under this relation, at a certain degree may be considered as a rubefacient; when it is of a higher degree, we have, besides redness, phlyctænæ. At this time there is not as yet any disorganization of the part; it is a simple excitation of the vital forces: burns produced by liquids have ordinarily this effect.

The accident which, in its intensity, comes next to phlyctænæ, is the horny-hardening of a part (*racornissement*). This phenomenon is independent of every vital property, since the same thing happens after death; in this case there is only a more intimate connection of the parts, but not yet any disorganization. Finally, when the action of caloric has been still more intense, the skin assumes a blackish aspect and becomes a true slough. There succeeds to these effects of caloric phenomena which, in the first stages of the burn, resemble very much the progress of an erysipelas, and which depend upon the peculiar mode of sensibility in the skin, as we have already said in the article on this malady. When disorganization is total, inflammation su-

pervenies in the surrounding parts, there occurs phlegmon, the eschar is circumscribed and falls off.

Several general symptoms are manifest during the burn. There is often gastric disturbance, a burning thirst, a more or less violent concomitant fever, which is always in proportion to the intensity of the disease: we seldom remark symptoms of ataxia.

The action of cold on the body is nearly the same as that of caloric, when it is carried to a certain degree. Its first action is to stimulate, as does caloric in its first mode of action; with this difference, that in this case there never happen any phlyctænæ on the red parts. When cold is very intense, there is numbness; it becomes debilitating, the complexion of the skin is blueish, livid, and at last mortifies throughout. It is not uncommon to see, in northern regions, the extremities become mortified by excess of cold, especially in old people; in this case, not only the skin dies; but even all the subjacent parts: therefore, heat and cold act on the skin nearly alike.

ARTICLE III.

Of the Measles.

The measles consist in a greater or less number of red points or spots, which occur on the skin, commonly in children. Sometimes this disease is epidemic. They have several stages: the attack, the eruption, its maturity and decline. They are always ushered in by a few days of fever, and this is called the attack. It has this difference with catarrh, that the concomitant fever never precedes the latter. This condition in measles, warns the physician as to the disease which may be expected to succeed. Then also there often appear gastric symptoms, such as vomiting, diarrhæa, sometimes, though rarely, nervous affections: the febrile symptoms last more or less time. At last the erup-

tion appears; it is almost always preceded by the fever we have just spoken of. Generally they begin on the face: sometimes there are spots of a greater or less extent, which covers the whole surface of the body: there are often petechiæ. The skin is seldom swollen; the redness progressively increases during three or four days; pressure causes it to disappear. It terminates in a disquamation, which happens not till three or four days after the redness has disappeared.

When the disease is badly treated, it may terminate in a repercussion, being translated to the interior, and to more vital parts, producing dangerous results: the intensity of the disease is always in proportion to that of the eruption. Often the mucous membranes are also affected at their origins, as we observe it in the pituitary membrane, mouth, urethra, and anus.

Autopsic examination shows us, in this disease, an extravasation of blood in the most superficial parts of the skin.

ARTICLE IV.

Small-Pox.

Small-pox is a contagious disease, and is often epidemic. Generally all persons are attacked with it; and most of them are exempt from it for the remaining part of their lives.

Small-pox is divided into two classes, namely: the benign or distinct, and the confluent. They are both of the same nature, and vary only in their degree of intensity, and in the different complications of which the confluent is susceptible, and from which the other is exempt.

The attack of small-pox manifests itself in two or three days; it is then followed by the eruption; afterwards desquamation, and finally convalescence. At the time of the attack, there is a fever which presents nothing of the character of an intermittent; sometimes there is exacerbation

in the evening, and at others there is none; a burning thirst, gastric symptoms, and ordinarily a general disturbance in the secretions. In certain cases there are cerebral symptoms, coma or delirium, epilepsy, general debility and anxiety. It is only after the eruption has occurred that we may properly and with certainty determine the prognosis of the disease. The pustules appear on the third or fourth day; they commonly begin at first on the face; and this eruption diminishes the general disturbance. The pustules are at first reddish, pointed, separated by wide intervals, which redden by degrees, a characteristic difference from measles, which redden suddenly over the whole surface at once. The pustules increase during three or four days; then, they are more or less large and rounded; there occurs a swelling more or less considerable in the cellular tissue, and especially on the face. By this means the eyelids are shut; febrile disturbance, which at first had yielded, then returns; pustules are observed in the mouth and nose, but no further inward. Authors have supposed, but very erroneously, that pustules were also developed in the intestines. Autopsic examination has never confirmed us in this opinion, which is derived, without doubt, from analogy.

In *distinct small-pox* the pustules are round and full; it is a bad omen when they are flat and flabby. The most healthy contain a whitish fluid, sometimes transparent; they are unhealthy when they have a blackish or bloody aspect: the pustules dry up in the order of their eruption, the symptoms progressively diminishing, the scabs fall, and convalescence begins. There remain for a long time some red spots, the cicatrices are more or less deep according to the size of the pustules; sometimes there occur fissures, which causing the pus to communicate from one pustule to another, form what are called *coutures*. The chorion in small-pox remains always unaffected.

A fatal termination of small-pox is the repercussion to

the interior, producing different diseases according to the organ to which it is translated. Sometimes it is complicated with ataxia or adynamia. It is not uncommon for phthisis to result from the repercussion of small-pox.

ARTICLE V.

Of Scarlatina.

Scarlatina has been differently considered by different authors. Some have regarded it as an essential fever, others as symptomatic of angina. It is difficult to reconcile these diverse opinions. It is true that the eruption of scarlatina is only secondary, and may sometimes be complicated with fevers of a particular character. There are some other cases when it is evidently a simple cutaneous affection, accompanied with symptomatic fever; scarlatina must then be classed with the eruptions of the skin. Commonly, a sore throat more or less intense, is added to the eruption. The relation which exists between angina and all eruptions, of measles as well as scarlatina, is very remarkable.

Further, if scarlatina is complicated with fever or angina, it is always accompanied by certain phenomena: ordinarily there are gastric symptoms, vomiting; the condition of the secretions is variable; we seldom meet with cerebral symptoms. The disease is ushered in by petechiæ similar to those of measles. In scarlatina, the spots are red, flat and large; they give almost to the whole skin a purple tint; in measles, we observe between the spots angular intervals, and a colour resembling claret, which is not observed in scarlatina. These spots disappear under the pressure of the finger, as in erysipelas; but in scarlatina there is no tension, and the redness is not so perceptible. There is no prickling heat; in the termination there never supervene any phlyctænæ. Hence it is difficult to determine to what cause we must refer scarlatina, and to decide

if it be an essential or if it be only a symptomatic disease. Dissection points out no difference between it and measles, and we only distinguish it from this malady by its concomitant phenomena.

ARTICLE VI.

Of Tetter:—or Herpes.

Tetter is a disease proper to the skin. It is ordinarily confined to this system, if we except the corroding Herpes, which sometimes interests the subjacent parts. Four species of tetter have been distinguished: the *herpes farinosus*, *pustulosus*, *miliaris*, and *exedens*. These four species do not differ in their nature. The individuals most subject to ring-worms are those who are said to have an acrimony in the blood. They have often pimples on the face; with these persons the functions are always more or less disturbed.

Farinaceous herpes occurs equally on every part of the body; but it is especially on the face, and more particularly near the roots of the hairs. When we observe them, sometimes we see the part at first red, at others it is not so; soon after small and burning pimples present themselves, smaller than those of itch. The fluid which they contain soon dries up; the subjacent epidermis exfoliates and forms what we know under the name of farinaceous tetter. Respecting the other inflammations, tetter is always chronic. Often in this species there is no concomitant redness. The seat of it is immediately under the epidermis. The least application of fatty substances causes it to disappear.

As to the herpes pustulosus, it is not so well known. Several authors have referred it to the herpes, of which we have spoken in the article on erysipelas. There supervene, at first, isolated pustules; but which soon unite and

form large sores, which dry up and fall off by desquamation.

The miliary tetter has much analogy with this species. They are often remarked on the posterior part of the neck.

The last kind of tetter, and which differs essentially from the others, is the herpes exedens. It may have its seat in the whole tissue of the skin; it begins at first by small isolated ulcers which unite, and become by degrees exasperated. It discharges a sanious fluid. After corroding the whole skin, it spreads over the surrounding parts; the subjacent organs are in some degree withered. The whole economy feels this disorganization. There supervene general symptoms. In the other tetter, they are only manifest when there is repercussion.

ARTICLE VII.

Tinea Capitis.

Scald-head, although a disease of the skin, exclusively belongs to the scalp. Many maladies have been included in this class which have not the least resemblance to it. Thus the milky scabs, which have been confounded with it, are entirely foreign to it; they disappear sooner. The scabs which it forms are less dry. Such are also the ulcers produced by vermin. They present the same phenomenon as the milky scabs; there comes out from them a pus which soon dries up on exposure to the air. These slight diseases produced by lice, deserve at times some attention. It has been observed that when these insects are destroyed too suddenly, the patient is exposed to dangerous consequences, such as violent head-aches. Finally, farinaceous herpes may also manifest itself on the scalp: we have already spoken of it.

Tinea capitis, properly so called, has been divided into two classes: the one which is ulcerated and the other which

is not so. This is its progress. It is observed always to appear on the scalp, at the roots of the hairs. Sometimes it is ushered in by small pimples similar to those of tetter; at others it terminates in small ulcers, from which is discharged a copious liquid. Soon after a crust more or less dry is formed over them which has the appearance of a general scab: at other times, isolated scabs are formed, they readily fall off, but are renewed with the same facility. The ulcers produced by scald-head have been imperfectly understood. Some have placed their seat in the bulbs of the hairs; but erroneously so. Autopsic examination shows us that they are situated on the surface of the chorion, and that they seldom extend any further. Sometimes scald-head ceases all at once, at others it is indefinitely prolonged, until an efficacious means is used to remove it. Often there exists a general diathesis of this affection; if it is reperculated, it may produce fatal results in the interior:

ARTICLE VIII.

Of the Itch.

The *itch* is an affection of the whole integuments, nevertheless, it is seldom seen on the face. It occurs particularly on the trunk and on the extremities. It may happen by infection or spontaneously. Whatever may be its cause, it is always manifested by small pustules, especially between the fingers, and generally on all the joints. These small pustules contain a whitish ichor; they are pointed and very easily distinguished from the other cutaneous eruptions. The affection is entirely confined to the skin. Certain modern authors have asserted that these pustules depend upon the development of animalculi; but it does not appear that their production is always owing to this cause. Indeed, we see them appear and disappear with the greatest facility. Whenever the patient gets warm, they are

very numerous, and but few when the weather is cold. The repercussion of itch may also produce fatal effects in the interior. These small pimples produce a peculiar itching different from that of others; sometimes they become excoriated. There supervenes a scab, which falls off by desquamation.

Leprosy was a very common disease with the ancients. It now occurs so seldom that we can not describe it.

ARTICLE IX.

Symptomatic Affections of the Skin.

These affections are very frequent in most diseases, whether acute or chronic. They may be divided into three classes. The first are those which consist in spots more or less considerable, as observed in miliary fever, scarlatina, &c.; finally, the last consists in the different alterations of the functions of the skin.

Eruptions in the different fevers do not possess the character of erysipelas. There is no tension, nor lively pain; there is never a termination by suppuration, often there is no desquamation, because there is no swelling. These eruptions appear differently: sometimes they are epidemic; they sometimes happen spontaneously in gastric and inflammatory fevers. Divers authors have believed these eruptions to be characteristic of the disease; but they do not induce any modification of the fever, and we can not consider them as dangerous. They have evidently their seat in the cellular tissue, subjacent to the epidermis. Most of these eruptions coincide indifferently with fatal or benign diseases. There is a peculiar one, called by authors *febris rubra* or *scarlatina*, which must always be considered a fatal symptom, because it is complicated with adynamic or ataxic fever. There happen sometimes analo-

gous eruptions, after the patient has eaten certain kinds of fish; such as lobsters, limpets, &c.

The other class of eruptions include *petechiæ*. They are of several species; the most common are those which accompany adynamic fevers. They must not be considered as a symptom of this disease, and they should not induce the physician to make any change in the treatment. Autopsic examination proves that their seat is in the cutaneous capillary tissue.

Besides the adynamic petechiæ, there occur also some which authors had employed in order to characterize the fevers with which they are complicated, and which they termed scarlatina urticata (*ortîées*.) But it is certain that these petechiæ may supervene in fevers of different natures. *Miliary* pustules are similarly circumstanced.

We distinguish two kinds of *miliary* eruption, the *red* and the *white*. The eruption commonly appears on the fourth or fifth day; it is often complicated with an adynamic fever. It ordinarily ends in desquamation. The red species is of rare occurrence. The white is the most frequent. We often see it to coincide with an inflammatory fever; on the redness which at first occurs, rise small scattered pustules: these small pimples fall off by desquamation. Their seat is also in the capillary system.

There also may occur on the skin, small vesicles, which are always a bad omen, inasmuch as they characterize and complicate themselves with a fever of a grave type.

The sympathetic alteration of the exhalation of the skin, takes place in almost all diseases. It then varies very singularly, in quantity as well as in its nature. Sometimes these disturbances of exhalation are merely symptomatic, at others they are critical.

The sensations of chills and heat are phenomena which are especially referrible to the skin, and not to internal organs. It is necessary to distinguish sympathy of heat from sympathetic heat. In fevers in which the patient believes

himself to be burning with heat, and nevertheless preserves his natural temperature, there is a sympathy of heat. Sympathetic heat, on the contrary, is when an organ is heated in consequence of an affection located in another part, or of a passion of the mind.

Among the chronic diseases of the skin, we first name venereal affections. They denote that the disease is then general. Sometimes it makes its appearance in local red spots; they have different degrees of hardness, especially on the edges. We know that the venereal virus most frequently affects the lymphatic glands, or the mucous membranes. Sometimes there occur also condylomæ, which always denote a local disease, whilst the spots announce a general affection. These affections are always chronic: we must take care to distinguish them from those eruptions which sometimes are observed on the face, and often depend upon an herpetic taint. Scurvy may also produce phenomena nearly similar, and exhibits what are called scorbutic spots. In this case, the tissue of the skin is untouched and only presents extravasated blood.

In most chronic diseases, the secretions and exhalations of the skin are deranged. Thus in exterior suppurations, the skin is dry, there is a slight chill at night, pulse small and tense, and there is perspiration at night.

As to the condition of the skin after death, it varies singularly: in certain fits of apoplexy in which the face is purple, this colour disappears very slowly for want of tonicity of the small vessels. It is the same thing with all the other acute inflammations. As to the chronic one, they scarcely disappear; the blood is then almost combined with the parts.

CHAPTER XI.

Diseases of the Muscles of Organic Life.

THE muscular system is naturally divided into two principal parts: the one comprehends the organic muscles, the other the muscles of locomotion. These two classes, so distinct in physiology, in the relation of their vital properties, are also distinct in pathology, in regard to their affections.

The organic muscular system, is capable of being affected with a great many diseases from the varieties of its structure. The uniformity of the other, on the contrary, renders all diseases common, and susceptible of suddenly passing from one part to another, as rheumatism; every fibrous part of the viscera being isolated, has its peculiar disease. Thus the inflammation of the intestines is not the same as that of the heart or matrix. We shall treat first of the diseases of the heart.

ARTICLE I.

Diseases of the Heart.

The heart is composed of three parts: of its external membrane, which belongs to the pericardium; its muscular tissue; and finally its internal membrane, which is derived from the vessels. We must only treat here of the fleshy substance of the heart. Its diseases have been distinguished into acute and chronic. The ancient physicians understood them but imperfectly. Corvisart has recently explained them much more completely. The heart is

without doubt susceptible of acute inflammation as are the other muscles; but we must submit this disease to further observation, since the signs already given are very confused; that which proves that it is of rare occurrence, is, that few traces are met with in autopsic examinations. The same is the case with the suppuration of the heart. With respect to the alterations of the fibrous parts of this viscus, in their vital properties, its contractibility, sometimes experiences interruptions, and this is what constitutes syncope. This case is of more rare occurrence than that in which these same vital properties are exalted. We can not doubt that in most fevers the heart is affected in its vital forces, which are increased in energy. We must take care to distinguish the pulse in the organic affections of the heart, from the one produced by fever in certain cases, for we should be often liable to pronounce an unfavourable prognosis. In fevers, when the pulse is intermittent, it is a bad presage, whilst when there is an affection of the heart, this intermittent pulse is kept up for a long time without any bad consequence. In intermittent fevers, a full pulse is a sign of plethora. On the contrary, in certain aneurisms of the heart, the pulse presents the same fulness. When dropsy supervenes on a disease of the heart, the pulse often has very great force. It is therefore the alteration of the heart that essentially produces fever, which afterwards becomes complicated, and thus assumes different characters.

Palpitation is another acute affection of the heart, which consists in throbbing, more or less distinct, and more or less persistent. These palpitations may sometimes be ascribed to a redundancy of blood in the organ, as occurs in running; at others to an excitation of the vital forces, as in emotions of the mind. In most affections in which the lungs become obstructed, the blood not being able to circulate, there results more or less violent palpitation on the right side. There is another cause of palpitation till

now unknown, it is asthma, which although its seat is in the lungs, is, nevertheless, seldom remarked without palpitation. This throbbing is accompanied with difficulty of breathing, oppression, &c. This condition often erroneously leads the physician into the belief that it is a disease of the heart.

Palpitations commonly are ascribed to the organic condition of the parietes of this viscus, which may ossify or become more dilated, constituting two classes of diseases. We shall first speak of the latter.

The size of the heart in the subject may vary according to the kind of death. There are cases in which the right side is very much contracted, as in death from hemorrhage. In persons decapitated, we find the heart extremely small; and the same thing is observed in syncope. In phthisis, it also diminishes, because there is less blood than commonly.

In persons, on the contrary, dead from asphyxia, the size of the heart augments singularly; the same is the case in apoplexy: in these cases we find that the heart is twice as large as in cases of hemorrhage. These kinds of accidental dilatations especially occur in the right side; the attenuation of the parietes which then occurs, diminishes also the thickness of the fleshy columns. In aneurism, on the contrary, the columns assume a greater volume.

Aneurism of the heart may be formed in the right side, which contains black blood, or in the left side which contains red blood: the latter side is the one mostly affected; it especially occurs in adults, and ordinarily its cause is mental excitement. There may also exist other causes; one which is somewhat probable, is the ossification of the arteries surrounding the heart, which in this manner obstruct the circulation of the blood. Pathological anatomy furnishes us with many examples; thus the ossification of the arch of the aorta often induces aneurismal dilatation of the left side of the heart. Whatever may be, however, the

causes of aneurism, the following are its phenomena: they are either essential or symptomatic.

Throbbings in the region of the heart are not always a certain sign of aneurism; they are sometimes produced by the accumulation of fluids or by other causes. Generally, in aneurism, a throbbing more or less strong is felt in the regions of the chest, and so much the more lively as the patient is the more emaciated. Sometimes it extends even to the ensiform cartilage. Certain authors, in this case, have imagined that the dilatation was seated in the trunk of the celiac artery; but it is too deeply situated; then, on the contrary, we may be certain that there exists an aneurism of the heart. In very lean persons, sometimes we feel the pulsation more or less distinct on the right side. Sometimes the throbbings are continued; at others there are paroxysms, and they occur commonly in the evening; then the symptoms increase, and the patient is on the point of being suffocated. This condition is superadded to a peculiar disposition of the pulse, which varies singularly. Sometimes it is very full and strong; the throbbings are tumultuous; at others it is very small, feeble and concentrated. These varieties may be observed in the course of the same disease. Ordinarily in simple aneurisms, the pulse is not intermittent, it becomes so after the ossification of the valves. A pain is manifested in the diseases of the heart, as in all organic affections; this sensation of very great local pain is referred by the patient to the ensiform cartilage. Sometimes there is obstruction in the whole chest; on percussion the right side is duller than the other. This sign is less sure in these affections than in effusions. As to abdominal pressure it may sometimes be employed with advantage, and at others with no good result. When the heart is voluminous, then it is painful, and there is a sensation of faintness. The same thing happens when there is an effusion in the peritoneum; but when there is only an ossification it does not avail. The sensation of suffocation

is a symptom common to the disease of the heart and lungs, provided they be somewhat of a grave nature: we can not doubt, that when the volume of the organ of circulation is uncommonly large, that it causes suffocation by compressing the lungs. We remark that the patient is better during the day time, and that the symptoms increase in the evening. It is very essential to discriminate between the suffocation caused by the heart and that produced by the lungs. The position of the patient, with an affection of the heart, is a characteristic sign; he can not lie down horizontally, and in order to breathe with ease, he is obliged to sit up. In this situation, the heart does not press so much on the lungs. There is more or less violent cough, sometimes dry, at others accompanied with more or less abundant sputa. All these signs collectively give a correct understanding of the disease. Sometimes they persist, at others there is a paroxysm, especially in the evening, sometimes they appear but once in two or three days.

As to the symptoms of the surrounding organs, the pericardium is sometimes full of liquid; but not so often, in proportion, as the peritoneum is, in the diseases of the abdomen. The appetite is irregular; the face is swollen and becomes pale; the state of the secretions is variable. Sometimes there is leucophlegmasia, as happens in many organic affections. The duration of this aneurism is sometimes for three or four months; it may last from three to four years. This disease is evidently chronic: it is the only one of its kind which does not induce a disorganization in the parietes of the organ. Five or six days before death, there is a general alteration in the expression of the countenance, the patient expectorates pure blood or blood mixed with mucus. Autopsic examination shows the lungs to be sound, or only adherent, the size of the heart is more or less large; it is generally the left side which is diseased. There is often an affection of the aorta; the parietes commonly increase in thickness; the fleshy columns are very

large; sometimes the auricle is a little dilated; the lungs are more or less engorged; the gastric organs are in their natural state. The right side is sometimes also the seat of aneurisms; but, then, its parietes seldom increase in thickness.

We have spoken of the sympathetic affections of the heart in the article on fever.

ARTICLE II.

Diseases of the Digestive Muscular Tissue.

After the fleshy tissue of the heart, come next in order the muscular tissues of the œsophagus, stomach, intestines, bladder, and matrix. Generally they are very little exposed to organic affections. Dilatation never occurs in them. Cancers and different engorgements may affect them, but it is only by contiguity. This is not the case with acute affections: often vomiting of the stomach is determined by the spasmodic action of the muscular fibres. The same thing takes place in the *iliac passion*. The affection is then foreign to the organization and resides only in the symptomatic or essential lesion of the vital forces in these tissues. Vomiting may depend on the affection of the mucous membrane; often the organ which induces it, is very distant. Symptomatic diarrhœa is very common. The same is the case with respect to the bladder.

The muscular tissues of organic life have nothing in common with the muscles of animal life; they are not subject to convulsions. Nevertheless, there is a kind of cholic in which the muscular tissue of the intestines seems paralysed; it is the *painters' cholic*, in which there is such obstinate constipation. In certain hemiplegiæ, in which the intestines of the affected side participate in the paralysis, the bladder is subject to some spasmodic affections.

ARTICLE III.

Diseases of the Uterine Tissue.

The tissue of the matrix is the seat of numerous lesions; although much has been written concerning them, still they are very little known. The detection of its inflammation, as that of the heart, is attended with great difficulty; although we can not doubt its existence, we want, nevertheless, signs to recognise it. In post-mortem examination we find only feeble traces of redness. Although authors have spoken of suppuration in the tissue of the matrix, nevertheless, we seldom observe any remains of it. In puerperal fever, we always find this tissue healthy. As to the induration of the matrix it is somewhat rare and does not always induce a diseased state: It is found in this state in very healthy subjects. The cause of sterility was but incorrectly ascribed to this condition. In cancer this induration is only by contiguity.

The *polypi* of the matrix are of two species: some are produced in the mucous membrane, and may be considered as fungi, which may fall off in parts, others have their seat in the tissue itself. They are like sarcomatous tumours; they seldom appear before the age of puberty; they are more or less hard and numerous, formed in concentric layers, and sometimes presenting in the interior a cellular structure. Their size varies and depends on their number. Sometimes they are developed on the side of the cavity of the matrix, at others on its exterior. In the first case the mucous membrane covers them without being affected; at other times the polypus occupies simply the thickness of the parietes of the matrix where it is formed. From this disposition we see how often the ligature must be an ineffectual remedy. The signs of polypi of the matrix are either general or particular;—at first there is a dull pain in the

region of the matrix, which extends to the lumbar regions; sometimes there occurs a disturbance of the menses, and fluor albus supervenes. This affection of the mucous membrane, with regard to polypi of the matrix, is produced by the same law by which the spitting of blood is caused in the affections of the lungs. From time to time there is sympathetic vomiting; the pulse is in its ordinary state; there is seldom any febrile disturbance; no sweats nor faintings, and generally there is no symptom of any other organic affection.

As to the particular signs, when the polypus is situated within the uterus, then it either remains in the matrix, or it enters the vagina, or finally protrudes from it.

In the first case it is difficult to recognise it. When it is in the vagina, we may ascertain it by means of the touch. There sometimes happen hemorrhages. The tumour is rounded or unequal in its different parts. It might be confounded with prolapsus uteri, or with the inversion of this organ. In the former case the difference is sensible to the touch: the os tincæ keeps always its ordinary situation. The inversion happens only at the time of child-birth; moreover, it is often of itself, a consequence of the development of polypi. Sometimes these polypi fall off spontaneously, being cut away by the os tincæ, or by a ligature being thrown around them. When they project out, the mucous membrane which covers them assumes an aspect similar to the skin. When the tumour grows towards and within the cavity of the abdomen, then it is difficult to recognise its existence: it is almost impossible to determine if it be a dropsy of the ovary, or a collection of hydatids. As to the signs drawn from the lesions of the functions, nothing positive can be determined from them. Ordinarily there occurs towards the end a general leucophlegmasia.

The *elongation* of the neck of the matrix, is also a disease of its fleshy texture, it may be spontaneous, and may

be sometimes produced by the displacement of this viscus. The matrix may also experience a *retroversion*, an accident which occurs in the first months of pregnancy, and from which result retention of urine and constipation.

The inversion of the matrix happens only during parturition; often for want of skill in the midwife who is too hasty in detaching the placenta. The symptomatic affections of the fleshy tissue of the matrix are very rare, when not pregnant. This viscus has almost no relation at all with the other organs. Often at the time of gestation, unknown and purely sympathetic causes may produce abortion.

CHAPTER XII.

Diseases of the Muscles of Animal Life.

THE system of the muscles of animal life is oftener deranged in its ultimate structure than that of organic life. First, there are many patients in whom it is merely passive: such are convulsions and paralysees, the cause of which is in the nerves. We shall treat here only of the affections proper to the muscular system.

Rheumatism is as yet almost entirely unknown with respect to its nature and the changes which occur in the muscles affected by it. This inflammation is very different from that of the cellular tissue and skin, in which we may observe what kinds of phenomena occur in them. We know not which is the special seat of it; we can hardly believe that the muscles and tendons, considering their different structure, should both be the seat of rheumatism. It seems to shift alternately from the one to the other: the difficulty lies in knowing if the disease be truly in the muscu-

lar or tendinous fibre: it is an object of research of great importance. Rheumatism is evidently observed in the parts in which there are many fleshy fibres, as in the pectoralis major, lumbar regions, &c. In these divers parts there exist some tendinous fibres. Post-mortem examination teaches us nothing on this subject: indeed we must suspend as yet our judgment.

There is no doubt but rheumatism is sometimes seated in the fibrous tissue, as when for example, it fixes itself on the articulations, in which certainly there are no muscles, as in the wrist, foot, &c. Then post-mortem examination shows no lesion in the fibrous parts; we find commonly the capsules and synovial membranes infiltrated with, and containing more synovial fluid than common. It seems that this more abundant exhalation of the synovial membranes is purely sympathetic, and the principal affection is in the tendons. It is therefore certain that, in several cases the seat of rheumatism is exclusively in the fibrous system; perhaps it has its seat in both systems at the same time, as we remark a venereal taint affecting simultaneously the bones and the mucous membranes. Whatever may be the seat of rheumatism, these are its phenomena. Generally it is produced by the transition from a warm to a cold and humid temperature. The suppression of different evacuations may also produce it. We only consider here acute rheumatism. It has its seat more particularly in the muscles of the lumbar region, and it is there termed *lumbago*; in the superior parts of the back, sometimes at the root of the neck, at others in the chest. We must not confound, like *Stoll*, the pain of pleurisy with that of rheumatism; it is always fixed in the former, but in the latter it shifts with the greatest facility. If a blister removes it, then we may conclude that the irritation is seated in the muscles.

The abdominal muscles are seldom affected with rheumatism. The parts most exposed are the articulations,

and especially the more important ones. The pain is very moveable, and particularly at night, when it shifts in an instant from one part to another. Sometimes two or three parts are affected at the same instant. The diaphragm is seldom attacked by it; when that happens hiccup supervenes.

The disease is ushered in by spontaneous lassitude, dull pains, dejection, chills, general uneasiness; soon after the pain becomes stronger and more determined; a sensation of tearing is experienced in the affected articulations, the part is very sensitive to the touch, and sometimes the very weight of the cover is intolerable; muscular contraction is very difficult; hence, almost complete aphonia, when the disease is in the larynx; the adjacent parts are more or less distended, the redness is more or less lively. These pains are often fixed, when they occupy the muscles.

The general symptoms are often those of gastric disturbance. There is always a concomitant fever with exacerbation in the evening. Perspiration deserves particular attention; commonly it appears in this disease, but it is not symptomatic. There is rarely any complication with adynamia or ataxia.

The termination of rheumatism, as to its duration, is very variable; it is, mostly, according to its intensity. Often this acute affection lasts during twenty or thirty days; whatever may be its duration, it may terminate by resolution. The part then presents a remission of all the symptoms, without being reproduced elsewhere, although the resolution be complete.

Nevertheless, the disease may again return in one or two years under a chronic or acute form, suppuration may also supervene; but the observations which have been made attesting it are so imperfect, that we are as yet ignorant how it is produced. The degree of its intensity is rarely so high as to terminate by death; and when it occurs, it is

owing, mostly, to an affection with which rheumatism is complicated; such as adynamia or ataxia.

A much more common termination is its passage to the chronic type, as we observe in all the other phlegmasiæ. Chronic rheumatism occurs pretty often without any previous acute affection; it is known under the vulgar name of *fraicheurs*. It materially differs from the acute, first as to its seat. The acute attacks particularly the articulations; the chronic is especially seated in the muscles; pain is very little felt on pressure; in the other case the sensibility is extreme. There is no tension in the chronic, in the acute it is considerable. In the former, there is no concomitant fever; in the latter there is always some. Gastric disturbance, sweats, frequently accompany the acute, which are seldom met with in the chronic. The acute follows the continued, the chronic the intermittent type; the latter disappears and returns with the changes of the weather: we must be able, from this, to distinguish easily these two species.

Sometimes the pain is fixed by election in a part, at others it is moveable; in both cases post-mortem examination teaches us nothing respecting the organic lesion. The intervals of the attacks are of longer or shorter duration, sometimes they last a month, at others only fifteen days. If this affection lasts several years, it is to be feared that the patient will have it for the remainder of his life. Either when the periods become nearer each other, or happen at greater intervals, we may succeed in removing the local pain by blisters or by some rubefacient. When the pain has lasted for a long time in a part, it induces a sensible degree of feebleness.

Rheumatism may be complicated with some other affection, and amongst others *gout*, with which it has great affinity; nevertheless, there are remarkable differences which distinguish them. As to the causes, gout is the result of good living, whilst rheumatism is induced by the

vicissitudes of the atmosphere. The first is hereditary, but the second is not; the former affects especially the small articulations, the latter is seated in the fibrous tissue or in the muscles. When it is a rheumatism of long standing, it lasts during life. Gout experiences long remissions; when the attack is dissipated, the urine deposits concretions.

Rheumatism may also coincide with scurvy or syphilis; but this complication is easy to be recognised.

A dangerous change, which occurs in rheumatism, is its translation to parts that are not commonly subject to it. Metastases, although more rare than in gout, are nevertheless observed; the pain in the articulation ceases, and the lesion of the organ to which the metastasis has taken place, manifests itself. In this case the action of a rubefacient is very efficacious, because it induces the translation of the irritation to the surface.

The muscles of animal life present also certain phenomena; such as the partial increase of certain parts in irregular nutrition, and caused by the greater exercise of these parts. Sometimes there is atrophy, produced either by the ligature of an artery, or the cutting of a nerve, or by a paralysis; then it is only appreciable after three or four years. Finally, at other times, it occurs after chronic rheumatic affections; the member is sometimes of a remarkable paleness, at others yellow. The blood-vessels are evidently contracted, and this relation of the vessels to the state of the part is constant as to its increase or diminution: the same thing is not the case with the nerves.

Lassitude is a pain produced by too long continued contraction of the muscles. It is sometimes symptomatic. Symptomatic affections of muscles are still less understood than the essential: it seldom happens that an acute malady is not complicated with them. These affections are confined to preliminary lassitude: they are never observed in the conclusion of diseases. These *pulling pains* (*tiraille-*

ments) are also observed in the mucous, inflammatory, and hectic fevers: no notice must be taken of these phenomena with respect to the treatment. The greatest degree of lassitude of the muscles is in adynamic fever, in which they are affected with such a debility that they can not any longer support the body; hence, faintness, the supine position, &c.

CHAPTER XIII.

Diseases of the Arterial System.

The diseases of this system are very different from those of the venous, owing to the difference of their structure. Indeed nothing is more different than aneurism and varix.

The diseases of arteries are much less understood than we should at first suppose from reading certain authors. Their inflammation, which ought to be present in all essential fevers, leaves not the least trace of its existence in the subject, either within or without the arteries. Sometimes, indeed, we find on the internal surface a greater degree of redness, but this depends on a portion of blood remaining combined with oxygen. We have then no data on the inflammation of this system. The same is the case with respect to its suppuration and gangrene; it seems less predisposed than the other parts, since, often, this system remains organized in the middle of a putrefied limb. We know nothing about its chronic inflammation, nor on its induration. In pathological anatomy we are better informed with regard to the diseases of the membranes which line the arteries; the internal membrane is the essential seat of

ossification, and this membrane presents this affection in the heart and arteries. This does not take place in the veins. This condition is so common towards the close of life, that it seems rather a natural phenomenon than a disease. And indeed nothing is more common with old people than an irregular pulse; with adults, whose circulation is more prompt, this state of things can not exist without great inconvenience.

The system containing red blood begins at the pulmonary veins. We have no observations attesting the ossification of these canals. The heart at its left auricle and ventricle may present ossifications in the valves. We often observe ossifications in the mitral valve; it then experiences a real contraction. Sometimes this ossification begins on the free margin, at others it begins at their insertion: in this latter case the contraction is not so great. Sometimes, without being ossified, this valve hardens (*raccornit*) in such a manner as to permit but little blood to pass; necessarily there results from it an irregularity in the pulse. The aortic valves are still oftener ossified; all three of them are frequently so, either at their base or summit. These ossifications are announced by symptoms of aneurism, which, indeed, sometimes complicates this affection; there is cough, difficulty of breathing, especially in the evening, a great irregularity in the pulse, &c.; nevertheless, this inequality is not inherent in this disposition. The internal membrane of the arteries ossifies very frequently; indeed this ossification has two degrees: in the first we feel inequalities and roughness; soon after several points of ossification are developed in the parts; they spread by degrees, forming patches, and being united to each other by means of a membrane which covers them. These patches, although very large, are very thin, and permit the artery to move yet with facility; sometimes they extend as far as the bifurcation of the iliac. The ossification of the arteries seldom happens in adults; it is particularly in old

men, in whom every part has a tendency to become hardened: however, this disposition does not induce any inconvenience in them.

Sometimes the mitral valves become the seat of small tumours similar to cauliflowers; a case of this kind has been related in the *Journal de Medecine*.

We shall only speak here of spontaneous aneurism, known under the vulgar name of *true aneurism*. In this disease, there is sometimes a dilatation of all the arterial tunics, at others the two internal are lacerated and the external alone is dilated.

When we examine an aneurism on its first appearance, the artery is seen dilated in all its membranes, although some authors have asserted that this order of things could not exist. It is true that this entire dilatation can not go beyond a certain point, the largest aneurisms, which are observed with this condition of the coats, are those of the aorta. Desault has seen at the Hôtel-Dieu a man that had five or six aneurisms in which every membrane was dilated; in this case they become necessarily thinner. As to the blood which the tumour contains, it is commonly liquid, since it disappears by the least pressure; nevertheless, we can not speak positively concerning it, because we seldom have an opportunity of seeing similar cases.

Most commonly, when the tumour has arrived to that size which no longer permits any dilatation of the two internal tunics, then they lacerate, and the external tissue alone forms at this time the tumour. Without this last coat the blood would be extravasated in the interior, and would cause death. On examining such tumours we find the two internal membranes ruptured. The internal surface of the external coat is rough, the adjacent parts are more or less influenced, the muscles are distended and become flattened: the same occurs with the nerves. The cellular tissue adds new layers to the cyst which it covers, so that this cyst becomes thicker as it gets older. There occurs sometimes

an œdema of the part; it may become a general one, as in all organic diseases. As to the contained blood, it always presents clots more or less large and hard, according as they have been of a longer standing, or are more superficial.—As to the aneurisms supposed to be formed by the internal membrane through the two other coats, they do not exist.

The general phenomena vary singularly, according to the seat of the disease. There is always a tumour and more or less distinct pulsation. The tumour either enlarges or disappears, according as it is pressed upon from above or below. Sometimes the pain is keen and at others it is not felt; it may experience intermissions. The state of the pulse is somewhat influenced by it.

The termination of aneurism commonly brings on death, as is the case with all organic diseases, when the situation does not permit an operation. At the curvature of the aorta, this malady is met with very frequently in old people who had not given the least suspicion of it during life: we observe it also in some adults. It is impossible to detect the beginning of the disease; ordinarily it is on the side of the sternum that the aneurism is manifested. It corrodes the sternum, and by degrees appears on the exterior; at this time it is impossible to be mistaken, and the tumour becomes enormous. Its termination happens as in every other part. We seldom observe aneurisms in any other part of the thoracic aorta: they are more frequent in its abdominal part. Some authors have supposed that aneurism could exist in the cœliac trunk; but it seems rather that the disease has its seat in the corresponding part of the abdominal aorta. The symptoms are generally pretty obscure; we can only decide from the pulsation and from the other general signs; otherwise the termination is the same as everywhere else. Aneurism seldom happens in the iliac and hypogastric arteries: however, it would be impossible to determine its existence in these vessels.

As to the aneurisms in the extremities, they present

precisely the same condition. They are somewhat rare in the superior extremities, if we except the radial in which they are sometimes observed. In the inferior parts they are much more common, and especially in the popliteal. As to the arteries of the leg, none have been observed, at least not primitive ones. The anatomical condition of the tumour is always nearly the same; they have the same termination, with this difference, that the operation is possible, and that the spontaneous cure happens sometimes through the collateral arteries, which assume a greater caliber, producing a derivation of blood, which permits the tumour to resolve itself.

The symptomatic affections of the arteries are unknown, and we are ignorant of the part they act in febrile diseases.

CHAPTER XIV.

Diseases of the Venous System.

THE venous system is divided into two parts, the general and the abdominal: their diseases have nothing in common. The vessels which compose the general venous system, reach the heart through two principal trunks; their ramifications, which are subdivided in the whole economy, mostly follow the same distribution as the arteries. The loose cellular tissue, with which the veins are formed, renders them very flexible. Their affections are entirely different from those of the arteries: their essential maladies are very little understood.

We have no positive sign of the *inflammation* of the veins; nevertheless we know that in varices they may sometimes become inflamed. When they are cut into,

they unite again with great facility, which supposes an inflammatory condition; the hemorrhage of the arteries, on the contrary, is only arrested by their obliteration. As to the phenomena through which their inflammation passes to its termination, we know nothing about them; the same is the case as to their influence in different disturbance of the circulation: what is certain, is, that in accesses of fever, when the disturbance is so great in the arteries, we perceive no remarkable change in the veins.

The internal membrane of these vessels never present any ossification, either in the veins themselves, or in the corresponding part of the heart.

The veins are very susceptible of dilatation, resulting from their structure; the least effort distends them, as we see by injecting them. Under this head we must distinguish two kinds of dilatations, the local ones and those which are general. We observe these latter ones in the parts which are very much distended, where the blood circulates and remains with difficulty. This is observed in the abdominal parts in ascites, in cancerous tumours of the breast, &c., and which were formerly known under the name of *varicous veins*.

In varix there is a local dilatation of the vein, in its circumference, or in all its portions. Varices do not exist equally in every part of the body, they are very rare about the head, either internally or externally; sometimes they happen in the neck. We may meet with a slight venous dilatation about the pharynx; we never observe any on the chest. The same is the case with the superior extremities, if we except when compression is made at the axilla; then the blood being hindered in its return, distends the vessels which contain it. The vena cava inferior never presents any varices; but they are very common in the spermatic vein, which is one of its branches, both because it is very long, and because it is hardly surrounded by any solid parts. These varices, in the spermatic vein, may be with-

in or without the abdomen. The hypogastric veins are also very subject to this accident, because the blood there circulates against its own gravitation. We must pay particular attention to distinguish varices from hemorrhoidal veins.

The inferior extremities are manifestly the parts most exposed to varices. The superficial veins are especially the most subject to them, because the blood circulates against its own gravitation, and because also the circulation here fails of every auxillary means. Old age and a certain condition produce them also. These tumours often complicate ulcers of the legs: pregnant women are subject to ulcers in these parts; there are some who experience them at every period of pregnancy.

Varices are very easy to recognise; they are blueish, soft tumours, increasing and diminishing as we compress the part above or below it. We sometimes find some resembling a string of beads along the course of the veins; sometimes, as we have already observed, varices are accompanied with inflammation; they may rupture and produce hemorrhage. However, in order that this should take place, the tissue of the veins must change its nature. These ruptures are pretty frequent. Post-mortem examination then shows nothing particular in the structure of the vessels. As to the blood contained in varices, it is almost always liquid, and in this it differs from that of aneurism.

The abdominal venous system is independent of the other in its affections, as in its functions. Stahl and his disciples had greatly extended the domain of its functions; they considered them as the source of a multitude of evils. We have very little correct information in relation to these affections; most of the opinions of Stahl in this respect are merely hypothetical. We are ignorant of the mode of inflammation and suppuration of the vena portarum, as well as the manner in which it cicatrizes, since it is never exposed to lesions. Varices are pretty common in its rami-

fications; they are less frequently observed in the abdominal cavity than in the neighbourhood of the rectum. These tumours are known under the name of *hemorrhoids*.

Hemorrhoids especially affect the neighbourhood of the rectum; children and old persons are less exposed to them than adults, from the age of five and twenty to forty. They are ascribed to an infinity of causes: thus riding on horseback; sedentary habits of studious persons; the prolapsus of the rectum in which the neighbouring veins are compressed; great straining at stool whilst labouring under constipation; violent purgatives; the compression produced by the matrix when affected with polypus, or whilst pregnant; the bladder being too much distended; an hereditary disposition; peculiar constitution, &c., are so many causes which may produce hemorrhoids. There is another series of causes, but which are much less certain; these are the causes produced by the obstruction of the liver. Some authors have pretended that hemorrhoids often result from this condition, and that reciprocally leeches applied in the neighbourhood of the anus, disengorged the liver; if this was the case, this engorgement ought to act on the whole portal system, and we ought to find varices in the abdomen; but this never happens. Moreover, in similar cases, the blood being pressed back into all the veins, autopsic examination ought to present them gorged with blood, as are both the inferior and superior cavæ in obstruction of the lungs; but we find nothing in this condition. It is pretty probable, from this, that the diverse states of the liver can not influence those of the vena portarum.

Hemorrhoids have their seat within or without the rectum; when they are within they are seldom an inch from the opening of the anus. They are always of the same nature, whatever may be their seat. These tumours present two very different conditions: in the healthy state they seem to be only varicous veins; but oftener they are ac-

accompanied with an engorgement more or less considerable of the adjacent parts. The blood, after having ruptured the varix, seems to have formed to itself a cyst. The phenomena of hemorrhoids are essential or symptomatic. When they are intense they produce but few phenomena: sometimes the tumour is livid, blueish, in the neighbourhood of the rectum; at others it seems simply red, and more deeply situated. This difference changes nothing in their nature; their number and position are variable; sometimes there are as many as twenty or thirty conglomerated about the rectum, at other times they are more disseminated; then there is always more or less tension. It is not at all times the same, but returns by intervals. The pain is in proportion to the tension; it is sometimes so keen that the patient can not bear it: there is at the same time a sensation of heat more or less considerable. When hemorrhoids are within, the difficulty of passing the *fæces* is extreme; it is less so when they are without. The *fæces* are then bloody; sometimes the hemorrhoidal flux is independent of the passage of *fæces*. It can not be considered as an hemorrhage of the mucous membranes; it is evidently the effect of a rupture.

General symptoms are not appreciable, when the disease is not very intense: but, in the contrary case, there are pains in the lumbar regions, and vertigo, symptoms not met with in other hemorrhages: there is often a concomitant fever, and difficulty in respiration.

We do not well understand the condition of these tumours on dissection; they have not been carefully examined. Nevertheless, it seems to be pretty certain that there are two species of hemorrhoids: in the first, there is a simple dilatation of the ramifications of the vena portarum; this case is not the most frequent; in the second species, it seems that there happens a rupture in the venous parietes; that the blood is effused and forms small cysts in the cellular tissue. This we may readily conceive, if we take

notice that inflammation causes the venous parietes to lose their extensibility. Sometimes these tumours present greater complications; there may supervene an inflammation in the neighbouring cellular tissue, abscesses, indurations, &c. These indurations form scirrhusities and produce contraction of the rectum. Another complication is the serous flux, termed *white hemorrhoids*; it is only in this case, a more abundant secretion of the mucous membrane of the rectum.

CHAPTER XV.

Diseases of the Nervous System.

IN anatomy, as in physiology, we recognise two distinct species of nerves; some come from the brain, and the others arise from the ganglia.

The diseases of the nerves of the first species are divided into those which belong to the nerves, and into those which appertain to the brain. It is often difficult to isolate them because of the close connection which exists between these organs.

The affections of the brain are divided into symptomatic and essential: the first are very numerous.

There are many of its idiopathic maladies which are very little known, such as inflammation in wounds of the head: the cerebral substance is often interested, without death supervening; then we have seen the brain to inflame and suppurate. It is also susceptible of chronic inflammation and of every other termination. Superficial inflammations of the brain are generally very rare; they have often been confounded with the inflammation of its membranes.

It is true there are, during the disease, cerebral symptoms; but they are purely symptomatic, as vomiting in peritonitis, &c. The spontaneous inflammation of the brain, are very little understood.

ARTICLE I.

Of Apoplexy.

Apoplexy is a disease much better known, and which belongs exclusively to the brain. It is not a disease of young persons, it attacks especially old people in whom all the parts tend to be paralysed. The causes which produce it are a life of luxurious idleness, a plethoric temperament, high living: it has been also asserted that those who have a short neck were more exposed to it; but this disposition does not appear so but because of the volume of the soft parts of the neck. Apoplexy seems also to be hereditary: sometimes it makes its attack after violent passion, such as anger, or after a copious meal; by long application of the mental faculties; by suppression of habitual evacuations; the frequent use of narcotics; it often occurs even in a spontaneous manner. The state of plethora, which has been so often regarded as a predisposing cause, seems to be an unmeaning word; indeed it is very difficult to determine the condition in which there is a superfluous quantity of blood, either by the redness of the face, which is often present, even in the state of cacoehymy, as we observe it in phthisis; or by the fulness and frequency of the pulse, which may manifest themselves in an infinity of commemorative circumstances. Asphyxia, which also resembles it in its symptoms, has its essential seat in the lungs. Drunkenness and narcotism have also relation with this affection. Catalepsy affects only the muscles of animal life: during the fit the limbs keep the posture in which they are placed. In ataxic fevers they are also cerebral pheno-

mena, but no paralysis, irregularity in the heat of the body and other symptoms which causes them to be distinguished. Epilepsy is also something like apoplexy.

It is important to know whether there is a real difference between an attack of apoplexy and one of paralysis; it seems that there is none. Paralysis is never an essential disease, it is only a symptom of lesion of the nerves. Hemiplegia is almost always the consequence of apoplexy; but there are muscles, in this case, more or less susceptible of being paralysed. They are especially the muscles of the face and those of the extremities: as to those of the trunk, they are little exposed to it. When these hemiplegiæ are caused by the brain, they happen in different manners. Sometimes there supervenes first a derangement in the senses, a pricking sensation in the limbs; finally, a complete hemiplegia: sometimes it occurs suddenly. When the patient has returned to his senses, the paralysis still remains: these paralysis are only different degrees of apoplexy. These two diseases reciprocally predispose to each other: commonly after two or three attacks the patient dies. Apoplexy often occurs in an unexpected manner, sometimes there are warning symptoms preceding it several days, such as coma, debility in the muscles, pricking sensations in the limbs, vertigo, &c.; soon after, a manifest attack happens. Few days after, there are well characterized symptoms, which we may divide into common and proper. As to the proper signs, they are observed in the functions of the senses, the cerebral functions, and in the motions. As to what relates to the senses, the eyes are fixed, the pupil is dilated, all the other senses are blunted; nevertheless, the general sense of touch enjoys yet a certain degree of sensibility, and stimulants applied to it, produce movements like in a man who starts in his sleep. The intellectual functions are entirely destroyed; motion is more or less impaired. Commonly there is hemiplegia, as we have already observed, seldom general paralysis.

With respect to general symptoms, it is said that the patient has a proneness to lie on the affected side; sometimes the pulse is very strong, at others it is not very frequent. Ordinarily the face is red and even livid; sometimes this colour of the face does not exist, or is caused by the particular kind of death. Respiration mostly is stertorous; which, without doubt, is produced by the paralysis of the muscles of the larynx: this condition goes on progressively increasing.

As to the digestion, there often occurs gastric disturbance and vomiting; this symptom disappears on the third day; there are often involuntary alvine passages, which are always a bad omen. Exhalations vary singularly; very often there is perspiration. Among the secretions, those of the salivary glands are especially affected; the saliva is rejected full of air. As to the heat, no irregularities are observed as in ataxic fevers, there is often a complication of adynamia. The duration of the symptoms of apoplexy varies singularly; sometimes they cease in twenty-four hours, most frequently in three or four days: they terminate ordinarily in death or in paralysis. All the cases are not equally intense at all times. When the patient escapes death, there remains commonly a disturbance of the cerebral functions; sometimes it is the memory, at others it is the judgment; sometimes there is a true mania; these lesions often affect the locomotive apparatus and produce paralysis, as we have already observed: this latter affection may by degrees disappear. The fits commonly return, especially with plethoric persons.

An immense number of subjects have been opened in order to examine the lesion produced by this malady, and various alterations of the brain have been found. We must take care to separate them from those which do not relate to this organ, as the ossification of its meninges and vessels. The brain often presents some alterations, especially in those who have died from apoplexy; but it is pretty com-

mon also to meet with none. There is not one exterior sign which leads us to decide in a precise manner when there is an effusion; there is only coma, stertorous respiration, &c., which may induce us to conjecture it. The effusion may take place in different parts: it is seldom found on the exterior; it is always in the substance of the cerebrum, cerebellum, or in the pons varolii, that it is most commonly found: in the brain we observed it about the thalami nervorum opticorum. We should be inclined to think its substance lacerated, without perceiving the orifice of any vessel, for capillaries are only distributed in this part. Sometimes the effusion is enormous, the convolutions are almost all obliterated by pressure. If blood is met with in the ventricles, it is only by a rupture that it has been there introduced. Effusions seldom occur in the cerebellum, and still more rarely in the medulla oblongata. It must be observed that the nearer the effusion is to the convexity, the longer may the patient bear this affection. He may sometimes survive it twenty or thirty days. The *serous effusion* does not occur in the same manner as the bloody one. It happens always in the ventricles, or on the exterior of the brain; it is commonly in the *pia-mater* that it is found, and not in the arachnoid when it is on the surface of the brain; but when it is in the ventricles, it is always effused by the arachnoid. Watery collections in the brain are sometimes so considerable, that they compress it. They are commonly a pure serosity. It is impossible during life to distinguish between serous and sanguine apoplexy, for they have common symptoms. Sometimes we meet with both at the same time. It seems that that which truly induces apoplexy is a peculiar condition of the brain, that we do not discern, and to which the serous or bloody collection is only accessory; for often in these cases no apparent lesion of the cerebrum has been detected. This condition of this organ would be analogous to that which produces ataxic fever. There are indeed other diseases in

which there supervenes an effusion, which still proves that this phenomena is only a consecutive accident. We must not ascribe it as did the ancients, to the action of the heart, which, by its violence, produces the rupture of the ancephalic vessels: if this was the case, the whole face would be in the same condition.

ARTICLE II.

Of Fungi.

The other functions of the brain are less understood and much more rare; and these are first of all *fungi*. They may happen in the brain, cerebellum or pons varolii; some have been observed on a man who complained, from time to time, of an extreme pain of the right and posterior side of the head. He was attacked with a hemiplegia of the left side, and he was taken to the Hôtel-Dieu. The disturbance of the intellectual faculties which he had experienced had ceased, and the paralysis remained with the same pain in the head; finally he died leucophlegmatic. On dissection, a fungus was found on the anterior part of the middle lobe of the brain. The whole part was disorganized: there was also an affection of the dura-mater. A similar fungus, situated on the posterior part of the brain, has been observed to produce the same phenomena.

Ossifications of the pineal gland have been found in epilepsy; but this malady often exists without presenting this phenomenon.

It is very difficult to know the cause and the seat of all *cephalgixæ*, which are symptomatic of a great many diseases: it is probable that mostly they are not seated in the brain. In gastric disturbances, it seems that the pain which the patient feels over and about the superciliary ridge, has its seat in the mucous membrane which lines the frontal

sinuses. As to the seat of megrim, it is impossible to determine. In certain persons who have been always complaining, organic alterations have been found.

The organic affections of the brain are very little known; there are some on which we shall not be long detained, such are *hydatids*, which sometimes present themselves in the choroid plexus. They frequently are as large as a pin's head, at other times larger. We must classify them amongst the anomalies of the brain. They have been found on persons in full health. The *dilatation* of veins and arteries of the brain have also been observed, but this is very rare.

ARTICLE III.

Of Fatuity.

Mental alienation is a disease of the brain, which, most frequently, leaves no trace of organic affections. Alienations ought to be divided into two classes: those from birth, and those which are accidental: the latter are the most common. Organic alienations are only to be met with in those from birth. Indeed, it is probable that the condition of the brain induces in children the modification of their intellectual faculties. If we observe animals, we see that there is a pretty exact relation between their intelligence and the volume of their brain.

In the cretins who are idiots from birth, there is in the cranium a peculiar conformation; the head is flattened transversely and elongated superiorly. The defects of organic conformation relate, then, either to the osseous case which envelops it, or to the brain itself. Sometimes the bones are thicker on one side than on the other, and it is not uncommon on the other, to find the two hemispheres unequal, which manifestly alters the functions of the cerebral organ, if we admit that it acts like the other symmetric organs.

All these different conformations must produce mental alienation from birth.

Commonly we find nothing like it in spontaneous alienation. The manner in which the disease occurs leaves no room to believe, that it may be the effect of a chronic cause; it seems even probable that there is, in this case, no organic affection. Indeed, how can we account for the long intervals which occur between the fits? Fatuitous persons seldom die suddenly from their disease; commonly there must occur another affection. This may only happen in certain fits of furious mania which resemble those of ataxic fevers.

Post-mortem examination presents no affection nor exterior phenomenon. Sometimes there is a very slight effusion; but it must be symptomatic, as we have seen it to be in apoplexy. Ataxic fevers are very common in fatuitous persons. Often in this case we find some alteration, which is without doubt produced by the ataxic fever.

As to the other diseases of the brain, it seems that they are entirely without any exterior lesion, such is epilepsy. Sometimes we find a scirrhus of the brain, or an engorgement of the dura-mater: the same is the case with catalepsia, narcotism and hydrocephalus.

ARTICLE IV.

Of Symptomatic Affections of the Brain.

After the stomach, heart and liver, there is no organ more susceptible of sympathetic affections than the brain. However little intense the fever may be, there is then delirium. This condition is especially remarkable in ataxic fever, although it is classified with the other essential fevers. In a great number of cases the brain seems to be the organ the most particularly affected. In effect, the principal phenomena of this disease are all cerebral: som-

nolency, which precedes and accompanies it; furious delirium, irregularity of heat, disturbance in the sensations and motions, &c.; often the condition of the pulse is little disturbed. The exacerbations in this fever are only indicated by the exaltation of the cerebral symptoms, and not by those of the circulation. However, the very sudden termination of the disease evidently proves the essential lesion of so interesting an organ: it would appear, therefore, that, in ataxic fever, the brain is the principal seat of the disease.

In other diseases, there are cerebral symptoms of two species: the head-ache of gastric disturbances seems to have its seat only in the *frontal sinuses*, and *not in the cranium*. On the contrary, in adynamic or inflammatory fevers, there are often real symptoms of ataxia. These sympathetic disturbances of the brain are analogous to all those which happen in similar cases in the other organs. In phlegmasiæ, when the concomitant fever is very violent, there are also cerebral symptoms: we observe none in chronic diseases.

ARTICLE V.

Diseases of the Nerves.

Although the diseases of the nerves furnish a vast field to pathology, nevertheless, we can say but very little of them with respect to pathological anatomy, since we do not find any mark of organic lesion.

Authors have comprehended, under the name of *nervous affections*, many diseases which are not of this kind, as catalepsis, narcotism, &c., which especially affect the brain. The nerves in their ordinary condition, are not the seat of known affections, nevertheless it may exist with them; but we are ignorant of these modifications. As to the *inflammation* which supervenes after their division, we can not

now, doubt, that it exists, since it is evident, that the nerves cicatrize, either by the immediate reunion of the two extremities, or by a kind of substance which seems intermediate and analogous to the calosity (*cal*) which supervenes in fractures. As to the *induration* of nerves, of which so much has been said, we do not discern it. Desault has seen in a whitlow a degeneration of the nerve in the affected finger.

The nerves are essentially the seat of certain pains more or less keen, which writers have made the subject of their studies; such are the *tic douloureux* of the face, and sciatica. Chaussier, in considering these pains in a general manner, has presented them very advantageously; he has termed them *neuralgiæ*; they manifest themselves in diverse parts and at different ages, especially in childhood and in adults, but seldom in old persons. These affections are characterized by several phenomena; there is an extremely keen pain in the whole part traversed by the nerve; it perfectly resembles the pain which results from a nervous branch being pressed: it is a very disagreeable stinging. A character which distinguishes it from that of rheumatism, is, that it does not present the mobility of that disease; it may indeed extend itself as we have already observed, but it does not change its place. Besides, it does not produce swelling, notwithstanding the excessive pains which sometimes necessitate the division of the nerve. The relief which this operation procures is only momentaneous, and the nerve forming a cicatrice, soon reproduces the same affection. The nervous pains return by fits; commonly the patient is subject to them for the remainder of his life. Often the causes are hysteric passions, with women whose nervous system is very sensitive; exposure to cold air; dwelling in a damp place, &c. Their seat may be in every part of the body, especially in the head; and particularly on the face. Few only are observed in the neck; there are some which happen in the pelvis, the pain then extends in

the sciatic nerve, and follows the course of its branches. These kinds of pains sometimes produce the paralysis of the part which is affected by them. Locomotive power returns after the fit is over.

Post-mortem examination teaches us nothing of the nature of neuralgiæ. Cotugno believed that these pains arose from the engorgement of the neurilema.

Another affection of the nerves is *convulsions*, which we must take care to distinguish from those which are produced by the brain, although the symptoms are the same. We recognise them because in one case the affection is local, and general in the other. For example, let us compare epilepsy with chorea sancti viti; besides, the nervous convulsion is continued, whilst those of the brain are intermittent.

Nervous convulsions are manifested in different manners; sometimes they only occur when the patient wills to move the affected limb, at others they are continual. There are individuals in whom we observe a convulsive movement at the commissures of the mouth, every time they wish to speak. Sometimes the muscles of the neck are affected with a continual movement, which then is rather produced by atony than by convulsion. Often there is also lesion in the nerves of sensation, as in those, for example, which go to the ear, eyes, &c.

Paralysis may also manifest itself locally, and then it is entirely foreign to the brain. This paralysis may affect the nerves of motion as well as those of sensation, as we observe to be exemplified in gutta serena, and in the loss of motion in an isolated limb. Besides this, we have no other knowledge of nervous diseases.

CHAPTER XVI.

Diseases of the Absorbent System.

THE absorbent system is composed of lymphatic glands and vessels which bear the same name. We shall successively consider its maladies in these two divisions; those of the glands are better understood than those of the vessels.

ARTICLE I.

Diseases of the Lymphatic Glands.

The affections of the lymphatic glands, which attack their tissue, are very common; but this frequency is in an inverse ratio to the age of the person. They are very common in children, and very rare with old people, which is caused, without doubt, by a greater development than they have in childhood, and which they lose in a more advanced age. The diseases of the lymphatic glands are either essential or symptomatic.

The essential diseases are, first, *inflammation*, which often ends in induration. Sometimes this inflammation occurs spontaneously, at others it happens by an exterior cause. At others it is produced by a wound which is at a great distance, without the absorption of any virus. It occurs still more frequently when the instrument is infected with some morbid virus. Sometimes also it is the venereal virus which causes the swelling and inflammation; then the absorbents swell with the glands and form a painful line, at other times the glands only are inflamed.

Sometimes these slight engorgements hardly deserve the name of inflammation; the slight swelling and the moderate pain are soon dissipated; but there often appears a swelling which is twice or thrice its volume. There is always more or less induration; the subjacent skin experiences nothing during the first days; the pain is not as keen as that experienced in phlegmon, and runs through its inflammatory stages more slowly. Whenever suppuration occurs, it is only after twelve or fifteen days that we can feel the fluctuation. As to the anatomical condition, we are not sufficiently well acquainted with it; the patient seldom dies under these circumstances; nevertheless, we know that there does not exist then any disorganization of the glands, which are alone augmented in volume. Acute inflammations occur especially in the glands of the groins and axilla. We are entirely ignorant of the inflammation of the internal glands.

The termination of these inflammations may be made by suppuration; but it happens later than in phlegmon; thus the ancients had recommended to open abscesses not with a knife, but with caustic. After more or less suppuration, the wound heals. On dissection we find the gathering in the middle of the gland.

Another very frequent termination of inflammation of the glands is *induration*; thus, after a venereal taint, the inflammation of a bubo having run through its periods, terminates in a hard, and more or less large tumour. This condition of induration is so common in inflammation of the glands, that even during the stage of suppuration there is a hard circle immediately surrounding them; but it does not predispose to a cancerous affection. It lasts from five to six months, and disappears by degrees. Autopsic examination presents no disorganization of the engorged glands. In every kind of inflammation of the glands there is manifested a slow character in their progress; thus in the *scrofula*, which attacks particularly the glands of the trunk,

in general, the periods are very long. We do not know the nature of a scrofulous habit; even the causes are in part concealed. We may divide scrofula according to the part it affects. It occurs either in the abdomen, chest or neck, which affection mostly forms isolated diseases.

Tabes mesenterica is the engorgement of the glands of the abdomen. It commonly happens in children from their eighth to their tenth year. It is manifested by pains, gastric disturbances, and often an habitual diarrhœa. The belly is tympanitic; there is often vomiting. These gastric phenomena are no indication of the disease; but there is a peculiar general disposition; there is a fine skin, flaccidity, slight œdema, suffusion of the mucous membrane, small pulse, difficulty often in respiring; urine lactescent, in the first and second stage of the disease; however, there is debility, feebleness in the motions, and the intellectual faculties are very little developed. But soon we observe well defined phenomena; the abdomen becomes tympanitic, which is produced by the swelling of the glands and by the gases. Sometimes there is a voracious appetite, at others anorexia, pain in the abdomen, and complication of worms. The general symptoms are a difficulty in respiration, which is produced, without doubt, by the consecutive engorgement of the thoracic glands; and marasmus, that some writers have given as a characteristic sign. We should, at first, be inclined to believe that the non-absorption of the chyle is produced by the engorgement of the glands; but it is not until the last period that this function is entirely hindered, which must not surprise, since we see the lungs, towards the last stage of phthisis, fulfilling equally well their functions. Finally, strength diminishes, the tumefaction of the abdomen is enormous, pain is excessive, and shifts with the displacement of the mesentery; diarrhœa is habitual; there is a feeble and contracted pulse. Towards the end there occurs ascites, or the infiltration of

the lower extremities. There is no disease which reduces children to a more frightful marasmus.

There are few affections better known by autopsic examination than this one. The state in which we commonly find the glands may be referrible to four stages: 1°, simple swelling of the glands; 2°, transformation of a part of this gland into a steatomatous substance; 3°, a complete steatomatous state; 4°, in the last period, the glands suppurate and form a sanious fluid. The neighbouring glands are also engorged; those of the thorax may become equally engorged as those of the abdomen, and may form a disease entirely analogous to *tabes mesenterica*. Nevertheless, writers have only spoken of this engorgement as complicating this last disease. It is certain that it is sometimes essential, and that it constitutes a phthisis which has not yet been described, and of which I am about to relate a case:—

A child came to the Hôtel-Dieu with a slight cough, and difficulty in respiring. There did not exist either a scrofulous habit or a preceding venereal taint. The symptoms were more intense in the evening, and there was dry cough; and there happened suffocation every two or three days, which was renewed every time the patient made any exertion or ate too much; then respiration was hindered and the chest painful. One single circumstance could indicate the disease, it was the engorgement of the glands of the neck. The pulse was feeble and contracted. These symptoms evidently denoted a phthisis, and it was treated accordingly with pectoral and anolient medicines. Sometime afterwards, the symptoms became more intense, the expectoration was mucous and not purulent, the pain in the chest very slight; pressure obscurely extended in the whole cavity; the compression of the epigastric region produced suffocation. Diarrhœa; the hands and feet habitually warm, little passage of urine, and the countenance completely altered in its expression. The patient died in a frightful marasmus. On.

dissection, the seat of the disease was found to be in the glands of the lungs, which were steatomatous and very large. A great many children present the same disposition as the present one, and their phthisis may then be readily classified with the diseases of the lymphatic system.

Scrophula fugax is an affection of the glands of the neck: it is pretty frequent, and differs from *tabes mesenterica* in this respect, that it is slower and never mortal; it either suppurates, or its swelling is terminated by resolution. The few accidents, that *scrophula fugax* causes, are not to be ascribed to the nature of the disease, since it is of the same as other forms of *scrophula*; but to the neighbourhood of organs which it can not alter: anatomical inspection proves the veracity of this assertion. This affection may be produced by a general right, or be simply local.

When the vice is local, it is observed in the different parts of the neck, and particularly in the sub-lingual glands, and the salivary glands are nowise affected. There may be formed a string of engorged glands all along the neck over the track of the vessels; sometimes they are observed at the occiput. At first, it is an indolent engorgement; a scirrhus and hard tumour; the skin is slightly swollen. These indurations remain more or less stationary, sometimes during two or three years, and without altering in the least any function. Sometimes there is resolution. Towards the end the skin assumes a violet colour, and there occurs an evident fluctuation below it. These glands open spontaneously, and there is discharged from them a lactescent fluid loaded with whitish flakes. Sometimes the fluctuation disappears, because the fluid is reabsorbed. When the abscess discharges its contents, it remains for a long time fistulous, and cicatrization is only produced completely by the adhesion of the skin to the gland, which renders the scar deep and ugly. Autopsic examination of these glands may present, as those of the other parts, four different conditions.

The affections of the lymphatic glands may therefore depend upon a local or general vice. When the affection is general, it is not confined to the glands, but it acts on all the systems, in the same manner as the other general affections, such as the venereal, &c.

The ossifications of these glands are not a very rare phenomena, especially in the chest, where they are pretty often met with on dissections. Cancer seldom affects primitively the lymphatic glands, and they are only engorged consecutively in this malady.

Symptomatic affections are very common in this system, and are occasioned by the neighbouring organs. These glands are also affected in general diseases. Bubos are often a symptom in pestilential diseases. In local phlegmasia of the limbs, as in whitlow, it often occurs that the glands of the axilla are swollen. When there is a blister on the legs, those of the groins may also swell.

Thus the swelling of the lymphatic glands, may be produced by the absorption of a virus, by sympathy, &c.

ARTICLE II.

Diseases of the Absorbent Vessels.

Although we know pretty well the disposition of the absorbent vessels, nevertheless we are yet ignorant of their diseases. It is certain that they absorb the different kinds of virus; but these are not, properly speaking, diseases, because these kinds of virus act no more on them than on the other organs.

The real affections of these vessels are, first, inflammation, which may occur in two different manners: sometimes they are inflamed with the glands, which form a chain, and is the most common mode of inflammation; at others these vessels are also engorged, and Mascagni quotes some cases of their inflammation. When a person has

cut himself with an instrument impregnated with virus, the glands of the arm and the vessels which have absorbed this virus are engorged. It seems then that the inflammation spreads: the virus is absorbed. However, we do not properly understand yet this inflammation, we know only that it terminates sooner than those of the glands. The inflammation of the absorbents has seldom been observed but in the lower extremities. Besides, we have no knowledge of their induration or gangrene.

The varicose *dilatation* of the absorbents is rare. It is indeed sometimes observed in the liver, but it is doubtful whether it be produced by a pathological condition. As to hydatids, it is very little probable that they are occasioned by a disease of the absorbents. There is a pretty frequent species of dilatation of the lymphatics, which is common to the whole limb. Sometimes the branches are as large as the thoracic duct. These dilatations, which produce in certain cases infiltrations, occur on the occasion of compression and obstruction.

A great many disputes have arisen on the cases in which dropsies are produced by the want of action in the absorbents, or when they are caused by the exhalants. There are cases in which it is difficult to decide; nevertheless, in compressions, in long standing, when dropsy happens, it is, without doubt, for want of action in the absorbents. Sometimes the absorbents seem to increase their action. When we do not suppose the existence of circumstances hindering absorption, it is then very probable that it is by passive exhalation that dropsy is produced.

CHAPTER XVII.

Diseases of the Fibrous System.

THESE diseases are yet very obscure in their diagnosis and prognosis. The idiopathic affections of this tissue are very little understood. It seems that rheumatism, in most cases, is only the inflammation of this system. We do not understand its terminations, such as induration, suppuration, &c. Besides, every part which composes the fibrous system does not precisely resemble every other in its detail.

ARTICLE I.

Diseases of the Dura-mater.

The dura-mater is a fibrous membrane which covers the brain, and plunges into the vertebral canal. Although the contrary is believed, this membrane is little exposed to *inflammation*; it is communicated mostly from the arachnoid, which is below, for, commonly, we simply observe the internal surface which is affected. Nevertheless, when it is cut, it cicatrizes, which proves the necessity of a slight inflammation in its tissue.

The dura-mater presents *ossifications* and fungi. The first condition is not rare: all writers have spoken of it. These ossifications precisely resemble those of the arteries; they have their seat on the internal surface of the membrane; they happen on every part, and are more or less considerable.

Fungi of the dura-mater are also very frequent, they grow without our knowing their nature. They present

themselves variously. Sometimes they have their seat on the convexity of the dura-mater. They may be very numerous: when there is only one, it makes a more rapid progress. The continual throbbing given by the brain to it, causes it to wear out the bone of the cranium, and to make its appearance at last under the pericranium. At other times these fungi grow at the base of the cranium, produce and develop there very dangerous consequences, such as the protrusion of the eye from the orbit; sometimes they press the brain upwards, and from this become the more dangerous.

We must carefully distinguish these fungi from the excrescences that the dura-mater sometimes furnishes in the cicatrization of the operation of trepanning. It is then a very natural phenomenon, and which coincides with those of the bones and neighbouring skin, which by their contact form a common cicatrice.

ARTICLE II.

Diseases of the Periosteum.

The periosteum is the second fibrous membrane; it consists of filaments crossing each other on the bones, and investing them. The periosteum extends even over the cartilages, where it assumes the name of perichondrium.

Its essential affections are, first, *inflammation*, and we have said, that inflammation was very little understood in the fibrous system in general; nevertheless, there are cases in which the periosteum seems to be really affected by it. Thus in a fall, or after a violent blow on a bone placed near the exterior, there supervenes a hard tumour, the seat of which is in the membrane which covers it. Often also the periosteum may form an indolent tumour and without inflammation. Most surgeons have been puzzled to distinguish it from exostosis; but the latter, is mostly formed

in a slow and chronic manner. On the contrary, the periods of the periostosis are shorter; in eight or ten days the tumour has acquired a considerable size. The hardness indicates also a difference, for it is greater in the tumour of the bone, than in that of the periosteum. Most frequently these diseases are not to be separated, and when exostosis is present, the periosteum is also swollen and vice versa. Periostoses commonly affect the bones superficially, and they terminate in two different manners. After having remained stationary, they become painful; the skin becomes red, ulcerates and discharges an unhealthy pus, especially when there is venereal habit. The disease soon resolves itself into an exostosis by the ossification of the periosteum. Finally, periostosis may terminate by resolution.

Another pretty frequent affection, is the *ossification* of the periosteum. In a natural state, it is not doubted that sometimes the internal part of this membrane is ossified, although this is not the manner in which the bones are nourished. In necrosis, the periosteum is only affected consecutively, and when necrosis affects the middle part of the bone; then the dead bone is circumscribed, the subjacent part of the periosteum becomes inflamed, then cartilaginous, and lastly osseous. This seldom happens but in the middle part of the long bones, where this necrosis is the most common. Autopsic examination, in this case, presents the periosteum ossified, forming a bag which invests the dead bone free in its interior: the tumour is rough at the exterior. The internal periosteum is reddish, and sometimes presents fleshy granulations. The parietes are generally perforated by small cavities. The difference of this tumour from the spina-ventosa, is first its situation, then the continuity of the tumour with the healthy bone in the latter.

As to the other affections of the periosteum, its diseases by contiguity are well known, as in caries of the bones,

superficial necrosis, in spina-ventosa, and in osteo-sarcoma: in all these cases it participates in the condition of the diseased bone.

As to its symptomatic affections, we are entirely ignorant of them; it seems that venereal pains have not their seat in it, as other kind of pains, such as rheumatism or spontaneous lassitude.

ARTICLE III.

Diseases of the Aponeurosis.

We are entirely ignorant of the affections of the aponeuroses. Sometimes they compress an abscess, where they produce a great deal of pain, and then we divide them. As to their spontaneous diseases, we do not understand them.

ARTICLE IV.

Diseases of the Ligaments.

Ligaments, which form also a part of the fibrous system, are a little better understood; although we have not seen their inflammatory state; nevertheless, we know that it exists in the articulations manifested by the pain, and especially in the spraining of a joint. In effect, they alone, in this case, are sprained. When their contusion has been material, the parts which surround the articulation swell, as in gouty rheumatism; if it is still more intense, there is fever; this may even go so far as to produce tetanus. The condition of the part is not known to us, except in the last periods of the disease, which terminates by a white tumour.

ARTICLE V.

Diseases of the Tendons.

Tendons are seldom affected by diseases; their inflammation is very little understood; that which occurs spontaneously is entirely unknown: we observe it only to occur by contiguity, as in whitlow. Rheumatism does not affect them, since in the motion of the articulations, they are not the tendons which are painful, but the ligaments. Consecutive inflammation of the tendons happens in most external wounds, in which these last are cut. The ancients ascribed serious consequences to their division; but it is rather to the wound of the nerves that we must ascribe them. When tendons have been divided, the incised parts sometimes draw near each other and cicatrize, which supposes a real inflammation; but it is always very slow, and this reunion is only effected after that of all the other parts. When they are exposed to the air, they mortify and exfoliate like a bone, which proves their feeble vital energy; there are yet researches to be made as to their mode of reuniting. It is more easily affected in rupture than in incised wounds, as we see exemplified in the rupture of the tendo achillis and in that of the patella.

CHAPTER XVIII.

Diseases of the Synovial System.

THE affections of this system may be considered under two varieties: 1st, those of the synovial membranes of the tendons, and 2d, those of the articulations. First, in the synovial membranes of the tendons, we observe inflammation, dropsy and their withering.

We observe *inflammation* in the sheaths of the ligaments of the carpus and fingers, &c., &c. There is a panaris which is evidently seated in the sheath of the common flexors of the hand, and produces very serious consequences; the finger swells without any redness, but with a keen pain which is felt on the internal part of the finger. Soon after pus is collected and compressed between the bone and the synovial membrane. It seems that it is to this cause, that we must ascribe most of the accidents of this panaris. On opening its cavity, we find all the surface of the capsule red and filled by an ichorous and sanious pus. When the disease is procrastinated, the bone is affected with caries, the neighbouring articulation is also affected; then the loss of the finger is the consequence, which has caused some physicians to believe that this panaris is a peculiar disease; but it is a simple inflammation. Pus seems to vary a little in this case; it is always sanious and grayish. This inflammation may also occur in other capsules besides those of the fingers: sometimes they are observed on the ligaments of the tarsus or carpus, especially when the panaris has not been opened and the pus has been permitted to be diffused.

The synovial membranes of the tendons may also be the seat of *dropsy*; it is more particularly to be met with in those membranes which are not covered with fibrous sheaths: it may happen after gout and contusion. We sometimes find them on the instep, on the sheath of the common extensors, on the capsule of the inferior tendon of the patella. It is probable that these collections of synovial fluid are only affections produced by contiguity. It seems that in rheumatism, ligaments being affected, the subjacent synovial membrane exhales more fluid: the liquid which is discharged in this case is gelatinous and reddish. It was formerly believed that ganglia were also seated in the tendinous sheaths, which, however, sometimes are soft and elongated, and disappear by the use of a pretty strong compression. There are some of these fluctuating tumours which assume a round form, do not disappear on pressure, and are evidently seated in the cellular tissue subjacent to the capsule.

The *want of synovial fluid*, in the tendinous synovial membranes, may be produced by a panaris or by too long continued exercise of the tendons which glide in it; then there happens a peculiar crepitation and a slight pain.

The synovial membranes of the articulations are also exposed to many diseases: every time that there occurs any inflammation, it is accompanied with a very keen pain; with swelling very sensible to the touch, so that the patient can not endure the least weight. When the disease is very violent, there are superadded general symptoms. Inflammation may happen in all the articulations, but especially in the knee joint, in which we generally observe all the species of the diseases of the articulations. It ends by resolution when it is slight; at other times by suppuration, which is announced by excruciating pains, and which may terminate even in ataxic symptoms. We cause all these symptoms to cease by evacuating the pus; if it remains there for any length of time, the bone becomes carious.

on opening abscesses, we find the synovial membrane very red on its internal surface. It seems that the injuries produced by pus on this membrane are more sudden than in the other serous membranes. A sero-purulent effusion may yet suffer the patient to live for a long time. Gangrene and induration are never met with in the synovial system. A very frequent termination is chronic inflammation: we can not doubt that it occurs also in the articulations; there is then remission of the symptoms, and the pain from acute becomes dull.

The synovial membranes are torn in some luxations; then the synovial fluid escapes; but when the luxation is reduced a cicatrix is then forming.

Dropsy of the articulations is a more rare disease than the perusal of ancient authors seems to indicate. Ordinarily we observe it in the knee. It may be produced by different causes: first, by chronic inflammation of the synovial membrane; by a foreign body which is there developed; at other times it occurs spontaneously; or finally by the affections of the neighbouring parts, as in rheumatism.

From these considerations we must regard this disease as being ordinarily the result of another malady, and not adopt the treatment common to all cases. It is manifested by a fluctuation, and by a dilatation more or less considerable, according as the fibrous membrane is more or less thick.

Foreign bodies are pretty often met with in certain articulations, especially that of the knee. Their structure, volume and form are variable: sometimes they are osseous; at others cartilaginous; they are more or less numerous; and incommode more or less, according to the part in which they are placed. When they are isolated, it is nevertheless probable that they have been produced by the synovial membrane, otherwise their formation can not be accounted for.

The articulations are also subject to ankylosis, which is only the effect of a primitive disease. It may be a true ankylosis or a false one; *i. e.*, that there may be a reunion of the extremities which were before contiguous, or only impossibility of moving the limb, by some affection of the cellular tissue, ligament, or neighbouring muscles.

CHAPTER XIX.

Diseases of the Cartilaginous System.

CARTILAGES form a system which is disseminated in almost every part of the body. They differ according to the place where they are met with; thus those of the articulations are different from those of the ribs, larynx, &c.; which leads us to suppose that there belong to them different affections. All cartilages are remarkable for the obscurity of their vital properties. We understand but imperfectly the inflammation of the articular cartilages; and of all their diseases, our observation is confined to their swelling in spontaneous luxation. This disease occurs ordinarily in the hip joint, although it does not belong exclusively to this articulation. Luxation then is not the essential disease, but the result of the disease of the cartilage. *Petit* believed that we ought to ascribe it to the thickening of the synovial fluid, but post-mortem examinations have corrected this erroneous opinion. *Desault* had observed that, in the beginning, the cavity is already almost entirely obliterated by the cartilaginous substance which is swollen, whilst the surrounding parts are healthy. In a more advanced stage, there occurs an artificial cavity for the head of the displaced bone: the acetabulum is then lined by an ossified substance.

Scrofulous taint, and falls, are commonly the predisposing causes to this malady. At first there is pain in the articulation; at times keen, at others dull; difficulty in locomotion, and especially in performing certain movements at a time more or less distant from the attack of the disease; sometimes the head of the femur comes out suddenly from its cavity; at other times this dislocation is more gradual. After the luxation there happens either a lengthening or shortening of the thigh, according as the head of the bone is thrown above or below the articulation. The latter case occurs most frequently, and the former is only observed when there is a caries of the inferior part of the acetabulum. Very seldom have similar diseases been observed in other articulations.

It is very probable that, in several cases the tumours of the articulations, known under the appellation of *white swellings*, have also their seat in the cartilages. It is very difficult to determine when this is the case, for they may be produced by an infinity of causes, which would require a peculiar treatment for each one of them. There are cases in which we know which are the parts primitively affected: for example, in *sprains*, it is manifest that the ligaments are the parts affected. Sometimes the disease begins in the cellular tissue, but this seldom occurs. Should the patient die in this first stage, only one system is then found to be affected, whilst the other part of the articulation remains untouched; the pain does not yet induce the stiffness of the limb. Sometimes the primitive seat of white swellings is in the bone. Then, it is sometimes enlarged, and at others it is in its natural state. When the affection is in the cartilage, it may be manifested by the same phenomena as in the articulation of the hip joint. Whatever may be the primitive seat, the disease soon advances by contiguity from tissue to tissue, until the disorder extends to the whole articulation. A pretty common cause of this disease is the suppression of the secretion of

milk. Gouty rheumatism, and even gout itself may also be numbered amongst its causes.

As to the other cartilages, their structure exposes them to very different diseases from those of the articulations. They are very subject to ossification and caries, as is observed in the larynx.

As to other cartilaginous structure, such as those of the ears, trachea, &c., their diseases are extremely obscure.

CHAPTER XX.

Diseases of the Medullary System.

THE diseases of the medullary system are very common, though they are very little understood. We can not doubt in certain cases, that the medullary substance becomes inflamed, as in violent and spontaneous pains manifested in the middle of the bones. There often results from it suppuration, and then caries of the adjacent parts. J. L. Petit relates a case of this nature. There are some caries in which it is probable that the medullary system is essentially affected: it is difficult to recognise them.

All the authors who have spoken of *spina ventosa* have considered it as a disease of the medulla. Indeed if we compare the pains of this disease with the sensibility of the medullary organ, we shall see the reason of this probability.

Spina ventosa is a considerable tumour arising from the development of the bone and increase of its fleshy granulations. This disease differs essentially, according as it occurs at the extremity or on the middle of the bone. There is a total difference from these two circumstances. We do not observe this disease in the short or flat bones.

When *spina ventosa* is in the middle of a long bone, the pain is, at first, felt in the part, without being increased on pressure. There are two well marked stages; the first is indicated by that spontaneous pain which is sometimes remittent, and continues to last without any external appearance of disease; in the second stage, the bone which was sound begins to enlarge. On the exterior, we feel a hard tumour; the keen pain goes on progressively increasing; the soft parts inflame, and harden; a fistula soon supervenes, whence is discharged a fœtid ichor, till the end of the disease, which brings on death or requires amputation.

Under the relation in the condition of the parts, three things are to be considered; first, the medullary substance, that is found to be converted into a fungus, permeated by vessels which easily bleed, as has been observed by Desault; as to the bone, if it is boiled and exposed, it presents a cavity produced by the destruction of the *lanillæ*. The two surfaces, internal and external, are rough; the parietes are perforated by several holes which correspond to the *fistulæ*; the substance of the bone is no longer observed to be linear. As to the subjacent parts, we see that they are converted into a fatty substance with several fistulous passages.

Spina ventosa, at the extremities of bones, is very different on autopsic examination, although the symptoms are the same. On the attack there is a lasting or remittent pain. We observe a tumour, and a fistula. The prognosis is the same, but post-mortem examination shows the bone enlarged on all sides; its interior is full of filaments and carnosities. The only remedy is amputation.

CHAPTER XXI.

Diseases of the Osseous System.

THE affections of the osseous system are very numerous; though analogous to those of the other parts, and the feebleness of its vitality is the only cause which makes a difference in its diseases.

There is no doubt that *inflammation* occurs in the bones. It is observed in fractures for the formation of callus which is a genuine cicatrix, and only accomplished in bones after the period of thirty or forty days. The fleshy granulations at first grow at the two fractured extremities. The continual contact in which they are kept, soon induces the reciprocal adherence of these vegetations. The calcareous phosphate is gradually deposited by the proper vessels of the bone in the cellular and fleshy texture, which in this manner assumes an analogous consistence to that of the parts it is destined to unite. Not only is inflammation observed in the callus, but also in the exfoliation of the parts of the bones affected by necrosis; and it is by an analogous process that nature throws out the more or less thick lamellæ which have been deprived of life, either by a too long exposure to the air, or by any other cause, &c. The inflammation of the subjacent bone produces the growth of the fleshy granulation, which is acquiring volume, press on the dead lamellæ; and when many of these are detached they are called scales; at other times the exfoliation is insensible, which occurs especially when the lamellæ is very thin. After exfoliation the cicatrix is formed, which is very sensible, especially in superficial

bones, as those of the head; and there results the adhesion of the bone with the soft parts.

Caries maintains a chronic state of inflammation in the bones, from which is discharged a peculiar sanious fluid, that stains the dressings black. This disease differs essentially from necrosis, in which the bone is entirely dead, which in caries, on the contrary, the bone is reproduced in proportion as it is destroyed. The seat of caries is more especially in the spongy bones, the short ones, and the extremities of the long bones; it is occasioned by an infinity of causes. This diseased condition of the bones must not be confounded with that which is seen in the absorption of the sternum, or of any other bone, caused by the pressure of an aneurism or of a fungus; in which there is then, a loss of substance, but without change of nature. Sometimes the caries is superficial, at others is deeply situated. The periosteum is always more or less affected and often indurated. The soft parts are infiltrated; sometimes they are even changed into a lardaceous substance. There are fistulae from which more or less pus is discharged.

Exostosis is an affection common to all the bones. Although authors have considered it under all its relations, nevertheless it is sometimes confounded with other osseous tumours, which arises without doubt from the admission of too many species in this disease. We shall confine ourselves to three species, which will be examined separately; they are the eburneous, or hard (*eburnée*), the lamellated (*laminée*) and the carneous (*carnifié*).

The *eburneous exostosis* is an osseous tumour, having the texture of ivory. Sometimes it is the consequence of a venereal taint, at others it is produced by a blow. It may present itself in two different manners: either confined to a point, or attacking the whole diameter of the bone. Desault had in his possession a specimen of the latter species: it was from a subject, in whom some bones of the head were entirely affected by exostosis. Generally, exostosis

is confined to one part of the bone, as it is observed on the most superficial ones, and consequently the most exposed to contusions: such are the bones of the head, tibia, &c. Similar tumours have been observed to develop themselves in the interior of the cranium, without producing any lesion in the intellectual functions, because of the slow mode of development of the exostosis, during which, without doubt, the brain became accustomed to this pressure. They have also occurred in the interior of the pelvis, hindering the birth of the child. This species of exostosis is very seldom known to occur in the short bones.

The eburneous tumour is heavier than a portion of bone of the same size; and the longitudinal direction of the fibres, and the nourishing blood vessels have disappeared; this tumour presents a very singular resistance to the saw, and seems to be formed by a collection of substance exclusively calcareous.

As to the adjacent parts they are more or less enlarged; and, what is very singular, is, that when the disease embraces the bone, the surrounding soft parts are less affected than when it occupies only a single point of its surface.

We do not understand the *mechanism* of the formation of these tumours; however, their progress is very slow, and resolution or suppuration never occurs in them.

Spongy exostosis is better known, and accompanies almost always caries; and it is met with in every kind of bones, especially on the extremities of the long, and within the short bones. This enlargement is always consecutive to a primitive malady. It is also observed in the middle part of the long bones, as in rachitis, in which the tumours perceived in the middle of the limbs are only a tumefaction of the compact tissue, which then become spongy. This species presents an irregularity in its structure. In certain parts we observe collections of calcareous substance; in others we only see an areolar tissue. A considerable number of blood vessels are met with in these tumours,

and they are accompanied by an ichorous suppuration, which issues from a greater or smaller number of fistulæ. Spongy exostosis may be considered the first stage of osteo-sarcoma.

It has been asked if osteo-sarcoma is the cancer of the bones. In effect, if we compare the excruciating pains which exist in both diseases, we should be inclined to believe them analogous; but if, on the other hand, we examine them more attentively, we shall find that osteo-sarcoma has no fungus like cancer; which is observed to be always the same in all parts, and certainly there exist between cancer and osteo-sarcoma, differences which do not allow them to be confounded. All the bones may become the seat of this disease, especially the long ones. Desault has observed femurs and ossa innomita attacked by it. In its progress, we remark two well defined periods: the first is distinguished by pain; difficulty of locomotion; and lastly engorgement of the part. In the second, we are reduced to simple anatomical inspection; at which time there is great destruction of the parts, with fleshy productions, separating, at intervals, what still remains. Sometimes the two extremities of the bones are unaffected, and the fleshy substance is permeated by many blood vessels, which sometimes are simple capillaries, at others present large trunks. The adjacent parts are more or less affected; but the cartilages commonly remain sound. Varicose veins are observed in the neighbourhood; and the soft parts are infiltrated as in large tumours.

Fragilitas ossium is rarely an essential malady or occurs spontaneously; while in cancer, on the contrary, nothing is more frequent. This extreme brittleness of the bones may be local or general. It is only local when the bone lies close to a cancerous ulcer, such as the ribs when there exists a cancer in the breast; and is general when the disease has arrived at such a degree, that the cancerous diathesis is itself become general. This phenomenon, con-

secutive to cancer, does not exclusively belong to it; for it is sometimes observed in the ribs after phthisis, or in cases of obstruction of the spleen and liver.

It seems that the proximate cause of this brittleness, is the want of gelatinous substance, and not the great quantity of calcareous phosphate; for if this was the case, the osseous substance would be only hardened, as in *eburneous* exostosis. The diminution of gelatin produces no difference in the shape of the bone, as is observed in those which are burnt.

Mollities ossium, or softening of the bones, is an opposite condition to that of their brittleness; and it seldom occurs independently of rachitis. This appellation of *softening* of the bones, is a vague word, which does not indicate the disease; indeed, osteo-sarcoma, also, might be regarded as the same affection. Rachitis is especially confined to children, but may, however, appear much later than writers have supposed, as we have observed in a subject fifteen years old. The vertebræ are particularly affected by this disease. At first, the bones of the cranium increase either in extent or volume; so that the cerebral cavity assumes a greater capacity; however, this development does not affect the bones of the face, and often from this disposition results the precocity of the intellectual faculties.

As to the vertebral column, it is differently affected. Often the spinous processes are not developed, and the prolongation of the dura-mater is simply covered by the muscles; but this case is the rarest of all. Mostly there is deformity of the column, which may be curved forwards, backwards, or to either side. The most common deviation is backwards, constituting *gibbosity*; in which the sides are considerably influenced by this unnatural condition. Often the sternum is deranged in the relation of its constituent parts; one of which projects forward and produces another kind of deformity. When the flexion of the co-

lumn is lateral, then the sides of the thorax are singularly distorted, being nearer to the concave, and more remote from the convex side. The deformity of the vertebral column seldom extends as far down as the lumbar region: when this occurs, the convexity is forwards; and the pelvis then is very much influenced, and sometimes greatly shortened in its antero-posterior diameter. Rachitis seldom produces any deformity in the bones of the ilium.

The superior extremities are seldom distorted; but the inferior are very frequently so. The legs and thighs are arched in opposite directions, and produce a very great deformity. Besides, the extremities of the long bones are very frequently enlarged and softened, especially when there occurs a scrofulous diathesis.

When the disease is cured, the bones acquire more consistence, but never resume their natural state. The termination is commonly fatal when it is complicated with scrofulous or venereal diathesis.

The persons affected with rachitis have generally characteristic features: such as a peculiar colour of the skin; lively eyes; a more exquisite sensibility; precocity of mind, little muscular energy; and the digestive powers more or less healthy.

CHAPTER XXII.

Diseases of the Pilous System.

THE hairs enjoy so obscure a vitality that the greatest number of their alterations are not understood. There is only *Plica Polonica* which is susceptible of a particular description. It is not known in France; but is endemic in Poland. According to the descriptions given of the disease, it is hereditary and spontaneous; but not contagious; and is ushered in by several general symptoms. The hairs are matted and glued into inextricable tangles, grows long and coarse; they discharge an ichorous fluid from their extremities, and bleed when they are cut. Nevertheless, the subjacent epidermis is very dry.

Though the hair has a very feeble vitality, it is influenced by other diseases; it falls off after a very violent acute affection, such as an adynamic fever. This loss of the hair occurs in two different manners: either the bulb remains, and then they grow again by degrees; or they fall off, when there is no hope of their ever growing again, as it is observed in old people, persons exposed to the sun, and those who are subject to head-aches. The hairs become white by age or by violent chagrins. Whatever may be the cause, this phenomenon is always effected by the want of nourishing fluids, which no longer have the power to ascend in the capillaries.

Cutting the hairs too soon, after a severe disease, may bring on serious consequences. The same is the case with the other hairs of the body, the affections of which are not understood.

CHAPTER XXIII.

Diseases of the Epidermoid System.

THE epidermis enjoying very little vitality, must have very obscure diseases. They are divided into consecutive and idiopathic.

Corns are small tubercles insensible in themselves, but painful by the compression that they produce on the neighbouring parts. They are formed by the thickening of the compressed epidermis. They generally happen on the feet, produced by too tight shoes; and care must be taken to distinguish them from *warts*, which are produced by the chorion; they are organized, and bleed whenever they are cut too near their base. They must also be distinguished from *ognons** which are produced by cartilages.

The epidermis exfoliates commonly after an affection of the skin which it covers; thus, after erysipelas, small-pox, phlyctænæ, the membrane is observed to fall off under different shapes.

* A hard and painful tumour which occurs on the feet. T.

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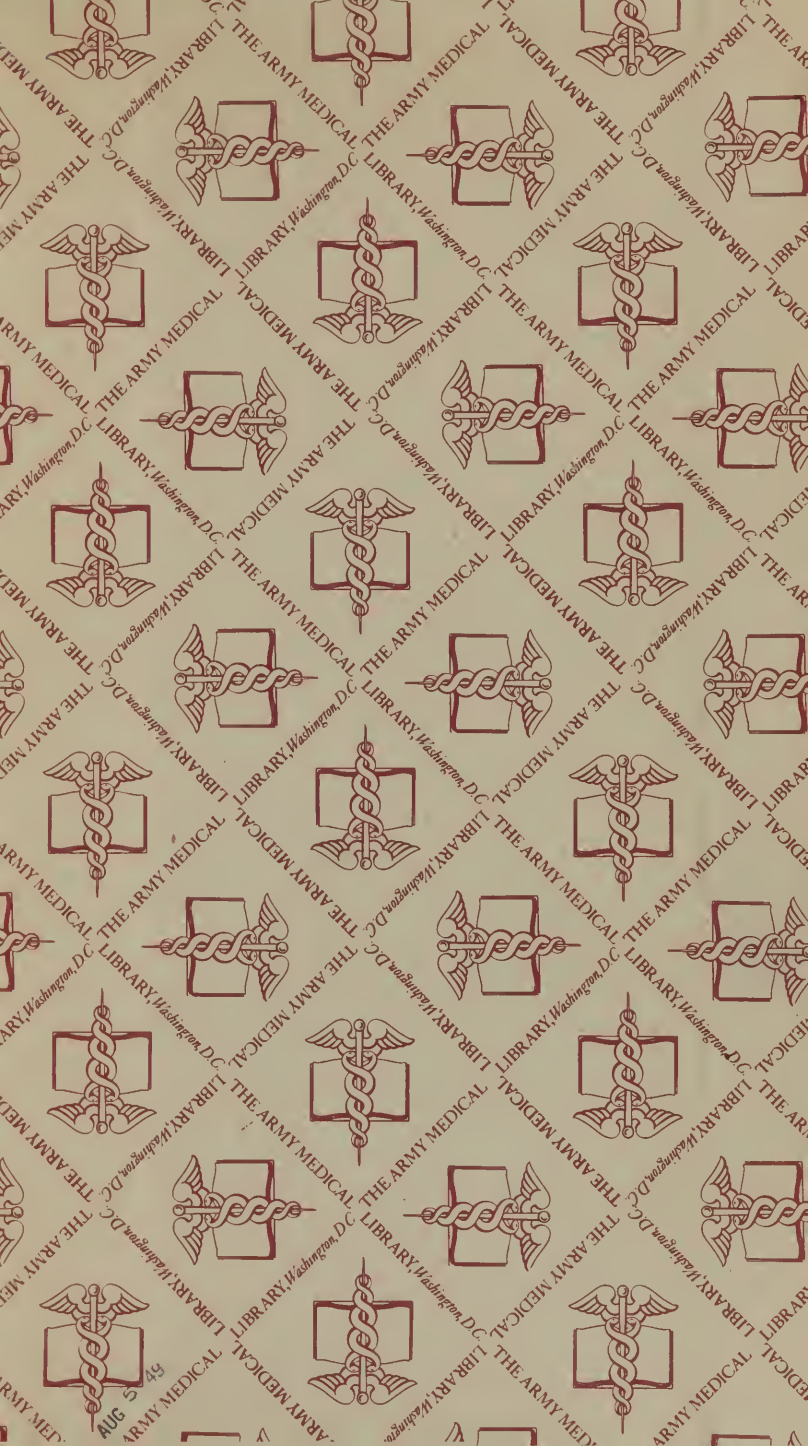
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